



CITY OF MANCHESTER.

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# REPORT

ON THE

Health of the City of Manchester,

1918.

BY

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(1354)

PUBLIC HEALTH OFFICE,  
MANCHESTER,  
December, 1919.

MY LORD MAYOR, ALDERMEN,  
AND MEMBERS OF THE COUNCIL.

I have the honour to submit my Report on the health of the City of Manchester for the year 1918. The chief fact of the year, so far as the death-rate is concerned, is the disastrous incidence of Influenza, which caused well over 2,000 deaths. Much more investigation and administrative provision will have to be made before such visitations can be seriously mitigated. The death-rates from the more common infectious diseases were not high.

The most important influence affecting Public Health was the great difficulty in obtaining habitable houses, which became increasingly acute. The Southern Town Planning Scheme made great progress, and is now nearing completion. Housing schemes made progress, but this subject belongs properly to the year 1919, and will be dealt with in the report for that year.

Much work was done in arriving at the condition of the Manchester milk supply. The important question of the municipalisation and distribution of the milk supply was considered under the guidance of Alderman Jackson, and a report of the Sub-Committee will soon be published.

The scheme for dealing with Venereal Diseases is now firmly established, and continues to improve and extend.

Maternity and Child Welfare work were carried on with success under trying conditions, and the excellent work done by Miss Seed and the Health Visitors in connection with influenza outbreaks merits special recognition. Infant mortality was lower than in any previous year.

The history of Tuberculosis in 1918 presents no special feature. The administration of the preventive as well as of the clinical side has been carried on by Dr. Sutherland.

It would be an advantage if all sections of Public Health could be carried on under one roof. Even without Tuberculosis, it is found that the space is inadequate to house the staff, and further dislocation is threatened. The number of notifications in 1918 was markedly less than in 1917, and the death-rate is also lower than it has been in recent years. It is hoped that this presages further diminution in the death-rate from this disease.

New schemes are urgently pressing for action in the coming year, among which come, first, housing schemes; plans for a new children's hospital at Abergele, with other extensions there; the initiation of colony treatment at Baguley and elsewhere; the reconstruction of the milk supply; review of the conditions of housing; extensions of the Maternity and Child Welfare work. Other matters incidental to the present position are extensions to hospital provision for the housing of nurses, administration in connection with the destruction of vermin, extension of control over food supplies under the Ministry of Health.

In carrying on the administrative work during 1918, in the absence on Service of the Assistant Medical Officers in the Public Health Department, I would express my obligations to Dr. Sutherland, Dr. Douglas Drummond, and my other colleagues. To Dr. McClure and Dr. Young I am indebted for the preparation of sections of the Annual Report during my enforced absence in the autumn of this year (1919). To the Chairman and other members of the Public Health Committee and the Council I am indebted for special consideration during the present year.

I have the honour to be,

My Lord Mayor,

Your obedient Servant,

JAMES NIVEN.

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# ANNUAL REPORT.

## STATISTICAL.

The following are general statistics for the year 1918:—

Area of the City in acres .....	20,799						
Estimated population at the middle of 1918 .....	<table> <tbody> <tr> <td>{ Males .....</td> <td>370,577</td> <td rowspan="2">} .....</td> <td rowspan="2">770,248</td> </tr> <tr> <td>{ Females .....</td> <td>399,671</td> </tr> </tbody> </table>	{ Males .....	370,577	} .....	770,248	{ Females .....	399,671
{ Males .....	370,577	} .....	770,248				
{ Females .....	399,671						
No. of persons per acre .....	37						
No. of families or separate occupiers at the Census taking, 1911...	152,317						
Persons married per 1,000 of population in the Manchester Union..	14·54						
Births in the City of Manchester .....	<table> <tbody> <tr> <td>{ Males .....</td> <td>6,601</td> <td rowspan="2">} .....</td> <td rowspan="2">12,911</td> </tr> <tr> <td>{ Females.....</td> <td>6,310</td> </tr> </tbody> </table>	{ Males .....	6,601	} .....	12,911	{ Females.....	6,310
{ Males .....	6,601	} .....	12,911				
{ Females.....	6,310						
Annual birth-rate per 1,000 of population .....	16·76						
Deaths ..	<table> <tbody> <tr> <td>{ Males .....</td> <td>6,056</td> <td rowspan="2">} .....</td> <td rowspan="2">12,181</td> </tr> <tr> <td>{ Females .....</td> <td>6,125</td> </tr> </tbody> </table>	{ Males .....	6,056	} .....	12,181	{ Females .....	6,125
{ Males .....	6,056	} .....	12,181				
{ Females .....	6,125						
Recorded annual death-rate per 1,000 of population.....	<table> <tbody> <tr> <td>{ Males ....</td> <td>16·34</td> <td rowspan="2">} persons ...</td> <td rowspan="2">15·81</td> </tr> <tr> <td>{ Females ....</td> <td>15·33</td> </tr> </tbody> </table>	{ Males ....	16·34	} persons ...	15·81	{ Females ....	15·33
{ Males ....	16·34	} persons ...	15·81				
{ Females ....	15·33						
Deaths under 1 year of age per 1,000 births .....	106·73						
Excess of registered births over deaths .....	730						
Percentage mortality occurring in public institutions.....	30·60						
Registrar-General's estimated Civil population for calculation of death-rates .....	665,807						
Registrar-General's estimated Civil population for calculation of birth-rate .....	746,011						
Death-rate based on Civil population .....	18·30						
Birth-rate based on Registrar-General's estimate .....	17·31						

## STATISTICAL.

The general statistics for the year 1918 are recorded on page 1. There is much uncertainty as to the population, which, on the normal rate of increase, would have been 770,248, but on the Registrar-General's estimate for the Civil population 665,807. Reasons have been given in a previous report for believing that the actual population is far in-excess of the latter figure, though the former may be too high. It is certain, however, that there is a very great demand for new houses, and in any case the estimate based on the Civil population is no longer applicable.

It has not been found possible to get an estimate of the population from the books. And, if it were, there are no means of getting at the average number of persons per house. An attempt has, indeed, been made to do so by sampling from the figures collected in connection with infectious disease. The result of this sampling is to show a diminution per inhabited house when 1918 and 1919 are compared with 1911 and 1913. But, strangely enough, no increase of density is recorded for 1919 over 1918, notwithstanding the demobilisation of a large number of men.

As regards the results of sampling, it is to be observed that the figures naturally relate to a select population, in so far as infectious disease affects much more families with a number of children in them than it does other families, whereas the increase of population is believed to have occurred more especially from the circumstance that young married persons are inhabiting houses tenanted by other persons who would, in normal times, have their houses to themselves. In addition, many workers were probably added to the population during the earlier years of the war. Also the pressure for houses is very great, so much so as to hinder the ordinary action of the Housing Committee in dealing with unhealthy dwellings.

There can, at all events, be no doubt as to the fierce demand for houses, nor as to all existing houses being kept full.

The year 1918 is remarkable as being the first in which the death-rate approximates to the birth-rate.

This is due to two causes—the steady decline of the birth-rate and the phenomenal death-rate from Influenza. Whatever other causes may be affecting the birth-rate, there can be no question that the difficulty of getting houses to live in is a powerful factor in its decline.

The one clear fact amongst these hypothetical figures is the infantile mortality per 1,000 births, which shows a further diminution. And here it is to be remembered that any decline in the birth-rate tends of itself to raise the infant mortality, since the deaths occur out of a larger number of infants than those born within the year,

Throughout these returns the rates of births and deaths are measured on the larger estimate of population, unless where the figures are taken from the returns of the Registrar-General or of the Ministry of Health.

The chief causes of death during the year are shown below, compared with the corresponding figures for 1914, 1915, 1916, and 1917 :—

	1914	1915	1916	1917	1918
Tuberculosis of the Lungs .....	1257	1315	1238	1196	1103
Tuberculosis of Organs other than the Lungs .....	366	313	348	359	287
Diseases of the Heart .....	1048	1163	1025	947	920
Cerebral Hæmorrhage, Apoplexy, Hemiplegia.....	490	543	553	604	503
Pneumonia .....	1289	1089	944	929	1421
Bronchitis .....	1136	1278	1207	1097	1053
Digestive Organs .....	538	517	454	396	360
Atrophy, Debility (chiefly in infants) .....	305	277	164	155	153
Old Age ....	502	520	429	439	413
Premature Birth.....	409	350	317	262	280
Nephritis and Bright's Disease	369	369	335	307	275
Convulsions.....	79	58	74	74	61
Inflammation of the Brain .....	110	98	74	76	77
Diarrhœa and Dysentery.....	524	488	313	279	147
Measles .....	293	447	179	277	166
Scarlet Fever .....	160	83	35	15	21
Whooping Cough .....	283	70	330	49	330
Diphtheria .....	111	105	67	63	58
Influenza.....	113	136	133	98	2096
Malignant Disease.....	738	775	794	770	806

The outstanding feature of this table is the terrible mortality from Influenza and its allied condition Pneumonia. There is also an increase in fatality from Cancer, and the fatality from Whooping Cough is unusually high. Otherwise, generally, there is a decline in mortality from all the other causes of death. This is well marked under Tuberculosis, Heart Disease, Apoplexy, Diarrhœa, and the infectious diseases Measles, Scarlet Fever, and Diphtheria.

The following figures show the gains and losses in the death-rates in 1918 from a number of causes, as compared with the death-rates from the same causes over the average of the previous ten years:—

*Gains and Losses in 1918 per 1,000 persons living, as compared with the average for the 10 years 1908-1917—(See Table K).*

<i>Gains.</i>	
Measles .. .. .	0·26
Scarlet Fever .. .. .	0·09
Diarrhœal Diseases .. .. .	0·51
Diphtheria .. .. .	0·06
Enteric Fever .. .. .	0·06
Erysipelas .. .. .	0·02
Puerperal Fever .. .. .	0 01
Pyæmia .. .. .	0·01
Phthisis .. .. .	0·21
Tubercular Diseases (other) .. .. .	0·15
Alcoholism.. .. .	0·05
Premature Birth .. .. .	0·17
Nervous Diseases .. .. .	0·13
Heart and Blood Vessel Diseases .. .. .	0·27
Bronchitis .. .. .	0·26
Respiratory Diseases (other) .. .. .	0·06
Digestive System .. .. .	0·23
Urinary System .. .. .	0·12
Old Age .. .. .	0·01
Total .. .. .	<u>2·68</u>
<i>Losses.</i>	
Influenza .. .. .	2·57
Cancer .. .. .	0·06
Pneumonia .. .. .	0·16
Whooping Cough .. .. .	0·14
Total .. .. .	<u>2·93</u>
Balance of Losses from Above Causes ..	0·25
„ „ Gain from All Causes .. .. .	0·37

The table which enables us to examine the death-rates in the different Sanitary Divisions and districts, broken up into their constituent parts, according as the deaths occurred at home, in workhouse hospitals, or in other institutions, is given only for the three principal divisions of the City. It appears to show an increasing tendency to have recourse to public institutions.

TABLE I.—1918.—DEATH-RATES\* IN THE HOMES OF THE PEOPLE, IN WORK-  
HOUSES, AND IN HOSPITALS FOR THE VARIOUS DIVISIONS OF THE CITY.

STATISTICAL DIVISIONS	Estimated Populations to middle of 1918	Death-rate per 1000 of persons dying in their own homes	Death-rate per 1000 of persons dying in Workhouses	Death-rate per 1000 of persons dying in Hospitals	Total death-rate per 1000	Mean death-rate 1908-1917
City of Manchester. ...	770,248	10·97	2·58	2·26	15·81	16·18
I. Manchester Township..	102,412	14·79	7·28	3·22	25·29	23·94
II. North Manchester .....	224,680	10·44	1·37	1·97	13·78	13·67
III. South Manchester .....	443,156	10·36	2·11	2·18	14·66	15·27

\* In this table, *every death* occurring in a Public Institution has been referred to the District from which the patient originally came.

Table 2 shows that the male and female death-rates stand to each other in much the same relation as in previous years, the ratio of female to male death-rates being practically the same in 1917 as in 1905, though in 1918 the female death-rate approaches that in males.

TABLE 2.  
*Annual Death-rates—Male and Female.*

	Male	Female
1905 .. .. .	19·45	16·31
1906 .. .. .	20·65	17·47
1907 .. .. .	19·52	16·40
1908 .. .. .	19·87	16·47
1909 .. .. .	18·88	16·62
1910 .. .. .	17·37	14·51
1911 .. .. .	18·73	15·64
1912 .. .. .	17·68	14·79
1913 .. .. .	17·31	14·35
1914 .. .. .	18·36	15·28
1915 .. .. .	17·62	15·09
1916 .. .. .	15·53	13·68
1917 .. .. .	14·57	12·29
1918 .. .. .	16·34	15·33

The figures given by the Registrar-General in his Annual Return enable us to institute a comparison with other large centres.

The figures do not always agree exactly with our local figures, for reasons given in the Statistical introduction. Probably, however, other centres are affected in the same way as Manchester.

Table 3 shows a steady tendency downwards of infantile mortality in recent years, a matter for congratulation.

TABLE 3.—INFANTILE MORTALITY.

*Deaths per 1000 births at the ages 0-2 months, 3-5 months, and 6-11 months, in successive years.*

YEARS	Months of Age			
	0-2	3-5	6-11	Under 1 year
1891-95 (mean) . . . .	82.79	40.99	62.97	186.75
1896 . . . . .	78.71	38.11	59.31	176.13
1897 . . . . .	82.31	42.43	69.89	194.63
1898 . . . . .	86.64	42.72	66.51	195.87
1899 . . . . .	88.14	46.49	70.79	205.42
1900 . . . . .	81.42	42.42	64.91	188.75
1901 . . . . .	88.90	42.96	66.60	198.46
1902 . . . . .	73.49	32.23	45.73	151.45
1903 . . . . .	79.91	36.37	52.25	168.53
1904 . . . . .	84.37	42.01	60.34	186.72
1905 . . . . .	78.42	34.05	46.28	158.75
1906 . . . . .	78.65	35.77	54.68	169.10
1907 . . . . .	73.91	30.46	43.07	147.44
1908 . . . . .	76.20	30.09	46.16	152.45
1909 . . . . .	73.20	25.37	36.98	135.55
1910 . . . . .	67.50	23.90	40.44	131.84
1911 . . . . .	79.50	31.81	44.80	156.11
1912 . . . . .	65.31	19.70	37.26	122.30
1913 . . . . .	68.76	24.42	35.52	128.70
1914 . . . . .	68.19	23.16	37.28	128.63
1915 . . . . .	64.38	22.83	41.43	128.64
1916 . . . . .	61.55	18.50	31.22	111.24
1917 . . . . .	60.20	18.77	32.32	111.29
1918 . . . . .	52.59	20.37	33.77	106.73

It will be seen that the most marked improvement in 1918 occurred in the first three months of life.

TABLE 4.—INFANT MORTALITY.

Manchester District.

1918.—Deaths from stated causes at various Ages under 1 Year of Age.

CAUSES OF DEATH		Under 1 week	1-2 weeks	2-3 weeks	3-4 weeks	Total under 4 weeks	4 weeks and under 3 months	3 months and under 6 months	6 months and under 9 months	9 months and under 12 months	Total Deaths under 1 year
All causes	Certified .. .. .	292	82	61	47	482	227	212	223	214	1,358
	Uncertified .. .. .	13	..	..	..	13	2	1	3	1	20
Small-pox .. .. .		..	..	..	..	..	..	..	..	..	..
Chicken-pox .. .. .		..	..	..	..	..	..	..	..	..	..
Measles .. .. .		..	..	..	..	..	..	2	14	24	40
Scarlet Fever .. .. .		..	..	..	..	..	..	..	..	..	..
Whooping Cough .. .. .		..	..	..	1	1	15	23	26	24	89
Diphtheria and Croup .. .. .		..	..	..	..	..	..	1	..	3	4
Erysipelas .. .. .		..	..	..	..	..	1	..	..	..	1
Tuberculous Meningitis .. .. .		..	..	..	..	..	..	3	2	5	10
Abdominal Tuberculosis .. .. .		..	..	..	..	..	1	5	4	2	12
Other Tuberculous Diseases .. .. .		..	..	..	..	..	..	2	1	1	4
Meningitis (not Tuberculous) .. .. .		..	1	..	..	1	..	7	6	4	18
Convulsions .. .. .		11	4	4	2	21	11	8	3	3	46
Laryngitis .. .. .		..	..	..	..	..	..	..	..	1	1
Bronchitis .. .. .		1	2	4	6	13	37	28	30	20	128
Pneumonia (all forms) .. .. .		2	3	1	3	9	22	39	63	75	208
Diarrhoea .. .. .		1	3	7	3	14	29	19	19	15	96
Enteritis .. .. .											
Gastritis .. .. .		..	2	1	..	3	10	6	2	..	21
Syphilis .. .. .		..	1	7	2	10	10	6	..	2	28
Rickets .. .. .		..	..	..	..	..	..	..	1	..	1
Suffocation, overlying .. .. .		8	2	1	2	13	3	3	3	..	22
Injury at birth .. .. .		15	..	..	..	15	..	..	..	..	15
Atelectasis .. .. .		13	..	1	1	15	1	1	..	..	17
Congenital Malformations .. .. .		16	4	3	2	25	7	5	6	1	44
Premature Birth .. .. .		195	26	17	16	254	23	2	1	..	280
Atrophy, Debility, and Marasmus .. .. .		31	20	11	6	68	38	25	9	5	145
Other Causes .. .. .		12	14	4	3	33	21	28	36	30	148
Totals .. .. .		305	82	61	47	495	229	213	226	215	1,378

Nett Births in the year { legitimate, 12,034.  
 { illegitimate, 877.

Nett Deaths in the year of { legitimate infants, 1,217.  
 { illegitimate infants, 161.

## NOTIFIABLE INFECTIOUS DISEASES OTHER THAN MEASLES, WHOOPING COUGH, AND TUBERCULOSIS.

The diseases included in the Infectious Disease (Notification) Acts, 1889 and 1899, are as follows: Smallpox, Scarlet Fever, Diphtheria, Membranous Croup, Typhus Fever, Enteric or Typhoid Fever, Relapsing Fever, Continued Fever, Puerperal Fever, Erysipelas, and Asiatic Cholera, to which have been added Ophthalmia Neonatorum, Cerebro-Spinal Fever, and Poliomyelitis.\* The following cases were notified in 1918, and the numbers are compared with the average of the previous ten years:—

	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	Average for 10 Years	1918
Smallpox .....	...	...	...	...	1	1	...	...	...	...	...	...
Scarlet Fever ...	2,893	3,700	2,324	1,939	1,840	3,715	4,712	2,922	1,185	829	2,606	779
Diphtheria..... Memb. Croup } ...	546	598	498	472	474	650	746	548	614	581	573	518
Typhus Fever ...	...	20	2	10	...	...	1	...	...	1	...	...
Enteric Fever ...	393	369	358	256	242	292	156	174	78	86	240	68
Relapsing Fever	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Fever	101	84	131	130	124	124	104	94	99	54	105	66
Erysipelas .....	364	371	407	442	396	412	551	492	320	228	398	243
Ophthalmia Neonatorum	...	...	246	443	503	331	414	414	379	315	305	307
Cerebro-Spinal Fever	...	...	...	...	6	1	2	15	8	7	4	5
Poliomyelitis ...	...	...	...	...	55	6	12	8	9	14	10	10
	4,297	5,142	3,966	3,692	3,641	5,532	6,698	4,667	2,692	2,115	4,241	1,996

\* To these are now added in certain cases Malaria and Trench Fever, and also cases of Pneumonia.

The above table shows a striking drop in the number of notifications of all the chief infectious diseases. It remains to be seen, however, whether the whole of this drop corresponds in all cases to a real diminution in the occurrences of disease.



The deaths from the more common diseases are shown in the following figures :—

Years	Measles	Scarlet Fever	Diphtheria	Enteric Fever	Influenza	Whooping Cough	Diarrhoea	Phthisis
1908-17 average	334	81	97	48	113	203	486	1156
1918	166	21	58	9	2096	330	147	1103

These figures tend to indicate that the great fall in the numbers notified is, in the main, real, and is not all produced by temporary causes.

Below is given a comparison as between Manchester and other large towns of the death-rates from the more common infectious diseases, calculated from the figures given in the Annual Summary of the Registrar-General :—

DEATH RATES IN 96 GREAT TOWNS, AND IN CERTAIN LARGE TOWNS, IN 1918 PER 1,000,000 OF CIVIL POPULATION, AS ESTIMATED BY THE REGISTRAR-GENERAL, FROM CAUSES ENUMERATED UNDER.

Towns	Population	Enteric Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria	Diarrhoea under 2 years
96 Great Towns ...	16,545,401	19.462	.060	356.73	38.077	219.76	148.62	280.20
London .....	4,026,901	19.618	...	409.99	29.303	419.18	162.41	276.14
Birmingham .....	870,211	2.298	...	76.993	13.790	306.82	179.26	342.45
Liverpool .....	716,140	97.726	...	564.14	181.53	495.51	315.58	511.08
Manchester .....	660,143	12.147	...	249.95	33.326	496.86	84.831	187.84
Glasgow .....	1,114,100	19.747	...	331.21	22.440	370.70	169.64	313.26

### SMALLPOX.

No cases of Smallpox were notified during the year 1918.

## SCARLET FEVER.

The following figures show the course of the disease in quarters :—

TABLE I.—SCARLET FEVER.—ATTACKS IN QUARTERS ACCORDING TO DATE OF RASH.

Year	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
1917 ..	174	140	164	351	829
1918 ..	263	187	153	176	779

This table shows little departure from that uniformity of incidence throughout the year remarked upon for 1916 as being a feature of the lowest and highest points of the Scarlet Fever periodic wave, which is now due to ascend.

During 1918 the rate of attack from Scarlet Fever was lower than in the towns used for comparison, and was highest in North Manchester.

TABLE 2.—SCARLET FEVER ATTACKS, 1918.—RATES PER 1,000 LIVING, AS COMPARED WITH THE MEAN FOR FIVE YEARS.

	1913	1914	1915	1916	1917	Mean	1918
Twelve Towns * .....	3·47	4·86	3·49	1·81	†1·69	3·06	1·46
City of Manchester ...	5·40	6·89	3·91	1·57	†1·26	3·81	1·01
Manchester Township .....	4·30	5·05	3·09	1·90	0·90	3·05	0·99
North Manchester .....	8·64	7·46	4·47	2·01	1·21	4·76	1·04
South Manchester .....	3·89	7·13	3·84	1·27	1·07	3·44	1·00

\* These are Blackburn, Bolton, Bradford, Burnley, Halifax, Hull, Leeds, Liverpool, Oldham, Preston, Salford, and Sheffield.

† Based on Civil Populations.

TABLE 3.—1918—SCARLET FEVER ATTACKS IN DISTRICTS, WITH ATTACK RATE, CASE FATALITY PER CENT., AND REMOVALS TO HOSPITAL PER CENT.

DISTRICTS		ATTACKS	ATTACK RATE PER 1,000 LIVING	† CASE FATALITY PER CENT.	REMOVALS TO HOSPITAL PER CENT.
Man- chester Township	Ancoats .....	23	0·60	13·0	91·3
	Central .....	21	1·20	4·8	100·0
	St. George's .....	57	1·22	3·5	91·2
North Manchester	Cheetham .....	32	0·69	3·1	78·1
	Crumpsall .....	4	0·36	...	50·0
	Blackley .....	13	0·77	...	76·9
	Harpurhey .....	44	2·42	2·3	77·3
	Moston .....	48	1·52	...	70·8
	Newton Heath ...	36	0·80	...	80·5
	Bradford .....	29	1·10	6·8	96·5
	Beswick .....	15	1·21	...	100·0
	Clayton .....	13	0·79	...	69·2
	Ardwick .....	31	0·79	6·5	93·5
	Openshaw .....	72	2·14	...	80·5
South Manchester	Gorton (West) ...	19	0·71	5·3	73·7
	Rusholme & Kirk.	38	0·76	7·9	73·7
	Chorlton-on-Med.	44	0·83	...	72·7
	Hulme .....	52	0·85	5·8	86·5
	Moss Side .....	30	0·77	3·3	56·7
	Withington.....	72	1·15	...	62·5
	Gorton .....	69	1·32	2·9	78·3
Levenshulme .....	17	0·65	...	47·1	
City of Manchester ...		779	1·01	2·8	78·3

† Corrected; the fatal cases are those actually occurring amongst the cases notified.

The attack rates were highest in Harpurhey and Openshaw.

Notwithstanding the low total incidence of Scarlet Fever, it has not been found necessary to remove to Hospital more than 78·3 per cent. of the cases, which may be taken to imply that a fairly high proportion of the cases occurred under conditions permitting of satisfactory isolation at home.

The case fatality is slightly lower than the mean for the past ten years.

TABLE 4.

Year.....	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	Mean	1918
Case fatality per cent.	3·6	4·1	3·4	1·8	2·8	2·5	3·1	2·7	3·0	1·8	2·9	2·8

Table 5 gives a comparison of the death-rates from Scarlet Fever in different areas, and shows that the death-rate closely approximates to that of the entire country, though, probably, somewhat exceeding it, but is lower than that affecting the 96 great towns.

TABLE 5.—SCARLET FEVER MORTALITY, 1918.—RATE PER 1,000 LIVING, COMPARED WITH MEAN OF FIVE YEARS.

	1913	1914	1915	1916	1917	Mean	1918
England and Wales.....	0·06	0·08	0·06	0·04	0·02	0·05	0·03
96 Great Towns .....	0·07	0·09	0·07	0·04	0·03	0·06	0·04
London.....	0·04	0·07	0·07	0·03	0·02	0·05	0·03
<b>Manchester City.....</b>	<b>0·13</b>	<b>0·22</b>	<b>0·11</b>	<b>0·05</b>	<b>0·02</b>	<b>0·11</b>	<b>0·03</b>
Manchester Township .....	0·16	0·17	0·07	0·13	0·03	0·11	0·05
North Manchester .....	0·19	0·22	0·17	0·05	0·04	0·13	0·02
South Manchester .....	0·09	0·23	0·09	0·02	0·01	0·09	0·03
148 Smaller Towns .....	0·05	0·07	0·07	0·04	0·02	0·05	0·02

It will be observed that the death-rate in North Manchester is lower than that for the two other main divisions of the City.

### DIPHTHERIA AND MEMBRANOUS CROUP.

The usual tables for this disease are again given.

The following table shows the number of cases notified each year for the last ten years:—

1909	1910	1911	1912	1913	1914	1915	1916	1917	1918
598	498	472	474	650	746	548	614	581	518

TABLE I.

DIPHTHERIA, MEMB. CROUP, 1918.—ATTACKS IN WEEKS, ACCORDING TO DATE OF ONSET.

FIRST QUARTER			SECOND QUARTER			THIRD QUARTER			FOURTH QUARTER		
Jan.	5	17	April	6	6	July	6	6	Oct.	5	9
"	12	11	"	13	9	"	13	5	"	12	11
"	19	24	"	20	13	"	20	6	"	19	9
"	26	15	"	27	11	"	27	6	"	26	12
Feb.	2	21	May	4	12	Aug.	3	6	Nov.	2	5
"	9	20	"	11	10	"	10	7	"	9	5
"	16	12	"	18	5	"	17	10	"	16	10
"	23	18	"	25	5	"	24	13	"	23	6
March	2	14	June	1	7	"	31	12	"	30	4
"	9	13	"	8	6	Sept.	7	5	Dec.	7	4
"	16	16	"	15	12	"	14	7	"	14	7
"	23	18	"	22	7	"	21	6	"	21	12
"	30	13	"	29	7	"	28	6	"	28	7
Total...	212		Total...	110		Total...	95		Total..	101	

City total, 518.

TABLE II.

SHOWS THE ATTACK RATE PER 1,000 LIVING FOR THE YEAR 1918, COMPARED WITH THE MEAN OF FIVE YEARS.—DIPHThERIA AND MEMBRANOUS CROUP.

	1913	1914	1915	1916	1917	Mean	1918
*Twelve Notification Towns ...	1·43	1·47	1·39	1·13	†1·09	<b>1·30</b>	1·03
<b>City of Manchester</b> .....	0·94	1·09	0·73	0·81	†0·88	<b>1·89</b>	0·67
Manchester Township.....	0·73	0·83	0·85	0·95	0·78	<b>1·83</b>	0·88
North Manchester .....	1·06	1·46	1·00	0·97	0·99	<b>1·10</b>	0·81
South Manchester .....	0·94	0·96	0·58	0·70	0·64	<b>0·76</b>	0·55

\* These are in Lancashire and Yorkshire.

† Based on the Civil Population. Otherwise the Rates are here based on the Census figures.

The following table shows that the attack rate is highest at ages 3 to 5:—

TABLE III.

DIPHThERIA, MEMB. CROUP.—NUMBER OF ATTACKS, OF DEATHS, AND CASE FATALITY AT DIFFERENT AGES, FOR THE TWENTY-SEVEN YEARS 1891-1917, AND FOR 1918.

AGES	1891-1917			1918		
	ATTACKS	DEATHS	CASE FATALITY*	ATTACKS	DEATHS	CASE FATALITY*
Under one year ...	337	217	64·4	10	4	40·0
1 to 2 years ...	1007	511	50·8	17	3	17·6
2 to 3 ,, ...	1200	438	36·5	38	5	13·2
3 to 4 ,, ...	1445	432	29·9	49	4	8·2
4 to 5 ,, ...	1479	371	25·1	53	8	15·1
5 to 6 ,, ...	1327	297	22·4	55	9	16·3
6 to 7 ,, ...	979	161	16·4	50	8	16·0
7 to 8 ,, ...	737	108	14·6	35	4	11·4
8 to 9 ,, ...	606	85	14·0	37	5	13·5
9 to 10 ,, ...	447	52	11·6	20	1	5·0
10 to 15 ,, ...	1255	75	6·0	69	3	4·3
15 to 20 ,, ...	609	30	4·9	26	1	3·8
20 to 25 ,, ...	482	15	3·1	16	...	...
25 to 35 ,, ...	646	20	3·1	26	...	...
35 to 45 ,, ...	262	6	2·3	11	...	...
45 and over ...	121	9	7·4	6	1	16·7
All ages .....	12939	2827	21·9	518	56	10·8

\* The percentages in this column are the actual proportions of fatal cases to the attacks at those ages.

The comparison in case fatality of 1918 with that for the 27 previous years is matter for great satisfaction, especially having regard to the diminished incidence of the disease.

The case fatality at all ages since 1901 has been as follows :—

1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911
28·8	29·4	21·9	20·7	22·4	21·1	20·4	21·8	17·9	19·9	16·5
1912	1913	1914	1915	1916	1917	1918	—	—	—	—
20·0	14·9	14·3	18·8	11·7	10·8	10·8	...	...	...	...

From the following table we see that the apparent incidence of the disease was greatest in the districts of Blackley, Clayton, St. George's, Harpurhey, and Moston. The percentage of removals is 78·3, a high figure, and one which is satisfactory. The disease is one which yields good results to isolation, and care in removing infection.

TABLE IV.

DIPHTHERIA AND MEMBRANOUS CROUP, 1918.—ATTACKS IN DISTRICTS WITH ATTACK RATE, CASE FATALITY PER CENT., AND REMOVALS TO HOSPITAL PER CENT.

DISTRICTS		ATTACKS	Deaths	ATTACK RATE PER 1000 LIVING	† CASE FATALITY PER CENT.	REMOVALS TO HOSPITAL PER CENT.
Man- chester Township	Ancoats .....	26	2	0·68	7·7	88·4
	Central .....	13	1	0·74	7·7	100·0
	St. George's .....	51	8	1·09	15·7	88·2
North Man- chester	Cheetham .....	38	...	0·82	...	92·1
	Crumpsall .....	4	...	0·36	...	75·0
	Blackley .....	20	2	1·18	10·0	80·0
	Harpurhey .....	17	...	0·94	...	70·6
	Moston .....	29	1	0·92	3·4	79·3
	Newton Heath...	33	1	0·73	3·0	81·8
	Bradford .....	7	...	0·27	...	83·7
	Beswick .....	10	1	0·81	10·0	100·0
South Man- chester	Clayton .....	25	9	1·52	36·0	92·0
	Ardwick .....	17	5	0·43	29·4	82·3
	Openshaw .....	21	3	0·62	14·3	57·1
	Gorton (West) ...	23	2	0·87	8·7	78·2
	Rusholme & Kirk.	26	2	0·52	7·7	65·4
	Chorlton-on-Med	36	11	0·68	30·5	91·6
	Hulme .....	27	4	0·44	14·8	77·8
	Moss Side .....	9	1	0·23	11·1	44·4
	Withington .....	37	1	0·59	2·7	45·9
	Gorton .....	26	2	0·50	7·7	69·2
Levenshulme ...	23	...	0·88	...	69·6	
City of Manchester...		518	56	0·67	10·8	78·3

† Corrected: the fatal cases are those actually occurring amongst the cases notified,

The figures given below show that in 1918 Manchester had a death-rate from Diphtheria smaller than that which held for England generally.

TABLE V.

DIPHTHERIA, MEMB. CROUP MORTALITY, 1918.—RATE PER 1000 LIVING COMPARED WITH MEAN OF FIVE YEARS.

	1913	1914	1915	1916	1917	Mean	1918
England and Wales .....	0·12	0·15	0·15	0·14	0·13	0·14	0·14
96 Great Towns .....	0·13	0·16	0·16	0·15	0·13	0·15	0·15
London .....	0·09	0·16	0·16	0·14	0·14	0·14	0·17
<b>Manchester City</b> .....	0·14	0·15	0·14	0·09	0·08	0·12	0·08
Manchester Township .....	0·15	0·20	0·25	0·13	0·07	0·16	0·12
North Manchester.....	0·18	0·22	0·20	0·10	0·11	0·16	0·06
South Manchester.....	0·12	0·10	0·09	0·07	0·07	0·09	0·07
148 Smaller Towns .....	0·11	0·16	0·15	0·15	0·13	0·14	0·14

The results of bacteriological examination of swabs from notified and suspected cases, also from contacts, are as under, and will serve to indicate the measure of control exercised over the disease :—

#### DIPHTHERIA SWABS, 1918.

##### Notified Cases—

Swabs .. .. .	{	+ 442
		— 120

Swabs on trial .. .. .	{	+ 139
		— 704

##### Result of Contact Swabs—

+ Cases .. .. .	{	+ 61
		— 1392

— ve prim : .. .. .	{	+ 1
		— 35

## ENTERIC FEVER.

PREPARED FOR THE MEDICAL OFFICER OF HEALTH  
BY DR. W. ST. C. McCLURE.

The number of cases of Enteric Fever occurring during 1918 was 68, which shows a great reduction on the number notified in any previous year. Of those affected, 27 were males and 41 females.

Table I. shows the attack and death-rates compared with those of England and Wales.

TABLE I.

INCIDENCE OF AND DEATH-RATE FROM ENTERIC FEVER IN MANCHESTER.

*Number of notified cases, deaths, and death-rates per 1,000 living from Enteric Fever in each of eighteen successive years.*

YEAR	1901	1902	1903	1904	1905	1906	1907	1908	1909
No. of cases notified	359	378	387	325	345	384	265	393	369
No. of deaths. ....	75	66	93	66	55	83	37	75	71
Death - rate — Manchester .....	0·14	0·12	0·17	0·12	0·09	0·14	0·06	0·11	0·13
Death - rate — England and Wales...	0·16	0·13	0·10	0·09	0·09	0·09	0·07	0·07	0·06

YEAR	1910	1911	1912	1913	1914	1915	1916	1917	1918
No. of cases notified and accepted . .	358	256	242	292	156	174	78	86	68
No. of deaths . . . .	62	46	43	47	34	46	22	10	10
Death-rate — Manchester . . . . .	0·09	0·07	0·06	0·06	0·05	0·06	0·03	0·01	0·01
Death-rate — England and Wales..	0·05	0·07	0·04	0·04	0·05	0·04	0·03	0·03	0·03

Other tables which it has been customary to print have been compiled and recorded in the Office.



*Distribution.*

Of the deaths, there were 9 in St. George's, 8 in Harpurhey, 5 in Ancoats, and 5 each in Openshaw and Gorton. The remainder were fairly distributed over 14 other districts.

Tabulation of the attacks according to the dates of onset shows that in the first quarter there were 18 cases; second quarter, 29; third quarter, 10; fourth quarter, 11. The usual autumnal rise was again absent.

The same depression of the autumnal rise appears in the deaths from Diarrhœa.

Table II. shows at what ages Enteric Fever appears to be most prevalent, and also at what ages it is most fatal. It prevails from early infancy, is least fatal at school ages, and continues to become more fatal with advancing years. It appears to reach its acme of prevalence at the ages 20-25, and it is possible that the decline in numbers after this age is due to the number of those who have undergone protection.

(Table omitted.)

TABLE III.

ENTERIC FEVER ATTACKS IN WEEKS REPORTED IN 1918, ACCORDING TO DATE OF ONSET.

First Quarter		Second Quarter		Third Quarter		Fourth Quarter	
Jan ..	5 0	April ..	6 3	July ..	6 0	Oct. ..	5 1
, ..	12 2	„ ..	13 1	„ ..	13 0	„ ..	12 0
„ ..	19 0	„ ..	20 1	„ ..	20 1	„ ..	19 0
„ ..	26 1	„ ..	27 2	„ ..	27 2	„ ..	26 1
Feb. ..	2 0	May ..	4 4	Aug. ..	3 2	Nov. ..	2 1
„ ..	9 1	„ ..	11 5	„ ..	10 0	„ ..	9 0
„ ..	16 3	„ ..	18 2	„ ..	17 0	„ ..	16 0
„ ..	23 0	„ ..	25 3	„ ..	24 1	„ ..	23 2
March ..	2 2	June ..	1 5	„ ..	31 3	„ ..	30 1
„ ..	9 2	„ ..	8 2	Sept. ..	7 1	Dec. ..	7 1
„ ..	16 0	„ ..	15 1	„ ..	14 0	„ ..	14 0
„ ..	23 5	„ ..	22 0	„ ..	21 0	„ ..	21 1
„ ..	30 2	„ ..	29 0	„ ..	28 0	„ ..	28 3
Total..	18		29		10		11

TOTAL—68.

ENTERIC FEVER.—NUMBER OF ATTACKS, OF DEATHS, AND CASE FATALITY PER CENT. AT DIFFERENT AGES, FOR THE TWENTY-SEVEN YEARS 1891-1917, AND FOR 1918.

Ages	1891-1917			1918		
	Attacks	Deaths	Case Fatality Per cent.	Attacks	Deaths	Case Fatality Per cent.
Under one year . . . .	17	7	41·2	..	..	..
1 to 2 years . . . .	53	8	15·1	..	..	..
2 ,, 3 ,, . . . .	111	16	14·4	..	..	..
3 ,, 4 ,, . . . .	165	22	13·3	..	..	..
4 ,, 5 ,, . . . .	216	23	10·6	1	..	..
5 ,, 6 ,, . . . .	250	27	10·8	1	..	..
6 ,, 7 ,, . . . .	247	25	10·1	..	..	..
7 ,, 8 ,, . . . .	236	20	8·5	1	..	..
8 ,, 9 ,, . . . .	247	21	8·5	1	..	..
9 ,, 10 ,, . . . .	241	25	10·4	1	..	..
10 ,, 15 ,, . . . .	1410	154	10·9	10	2	20·0
15 ,, 20 ,, . . . .	1544	281	18·2	10	..	..
20 ,, 25 ,, . . . .	1512	299	19·8	9	3	33·3
25 ,, 35 ,, . . . .	2185	511	23·4	14	3	21·4
35 ,, 45 ,, . . . .	1057	316	29·9	12	1	8·3
45 ,, 55 ,, . . . .	716	251	35·0	2	..	..
55 ,, 65 ,, . . . .				3	..	..
65 and over . . . .				3	1	33·3
	10207	2006	19·7	68	10	14·7

*Sources of Infection.*

Analysis of the case sheets shows that there was no outbreak due to any common source of infection. Direct contact with previous cases accounted for 18 cases, and in this connection the time elapsing between the onset of illness and receipt of notifications may be noted.

In 34 cases notification was received within 14 days of the onset; the remainder were notified later. This delay is often due to procrastination on the part of the patient in seeking medical advice. On the other hand, in only 20 out of the 68 cases did the medical attendant diagnose the disease within eight days of his first attendance. Earlier use of the Widal test is thus indicated. The prevalence of Influenza during the year appears to have added to the difficulties of diagnosis, a number of cases being treated as such for some weeks before the true nature of the disease was discovered.

Mussels as a cause of the spread of Typhoid would appear to be a decreasing factor. The small number of cases in which a history of mussel eating is obtained and the entire absence of the usual autumnal rise in the typhoid curve during the past few years point to that conclusion. During 1918 close investigation of all cases associated with shell-fish consumption was made, and in eight only could the consumption of mussels be looked upon as a probable source.

Overlooked cases in affected households were searched for by the examination of blood specimens of immediate contacts, with the result that the blood of 27 gave a positive Widal reaction, 11 of which were or had recently been suffering from Typhoid.

#### EXAMINATION OF CONTACTS.

Table showing the age and sex of 136 family contacts whose blood was examined for the Widal reaction, and the result:—

##### *Males.*

	0-5	5-15	15-25	25-35	35 and over	Total
Negative .. .. .	7	20	8	2	11	48
Positive .. .. .	..	1	2	2	5	10

##### *Females.*

	0-5	5-15	15-25	25-35	35 and over	Total
Negative .. .. .	5	13	17	10	16	61
Positive .. .. .	..	1	4	1	11	17

Thus 27 out of 136 gave a positive reaction.

Of the 27 positive cases 11 showed or gave a history of recent symptoms of Typhoid Fever. The remainder, who gave no history of illness, were removed to Monsall Hospital for observation and bacteriological examination, with negative results.

BACTERIOLOGICAL EXAMINATIONS MADE FOR THE COUNTY BOROUGH OF MANCHESTER DURING THE YEAR 1918,  
PUBLIC HEALTH LABORATORY, UNIVERSITY OF MANCHESTER.

Month	Diphtheria				Typhoid				Tuberculosis				Venereal Diseases							
	+		-		+		-		+		-		+		-		+		-	
	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
January ...	30	364	394	7	22	29	31	87	118	6	48	54	66	87	153	...	6	6	6	6
February ...	49	398	447	5	18	23	37	98	135	4	41	45	53	49	102	3	8	11	11	11
March ...	57	456	513	14	36	50	41	111	152	5	47	52	36	55	91	2	5	7	7	7
April ...	15	204	219	4	23	27	33	109	142	5	33	38	63	67	130	2	...	2	2	2
May ...	19	179	198	12	55	67	43	93	136	6	21	27	33	43	76	...	2	2	2	2
June ...	18	186	204	23	57	80	51	135	186	6	36	42	28	55	83	...	3	3	3	3
July ...	8	135	143	2	10	12	32	89	121	1	36	37	28	75	103	1	5	6	6	6
August ...	37	206	243	5	11	16	37	92	129	3	30	33	...	...	...	...	...	...	...	...
September ...	15	198	213	2	6	8	31	66	97	2	45	47	...	...	...	...	...	...	...	...
October ...	17	177	194	2	11	13	40	109	149	1	24	25	...	...	...	...	...	...	...	...
November ...	15	174	189	3	20	23	14	93	107	2	29	31	...	...	...	...	...	...	...	...
December ...	20	120	140	3	16	19	27	75	102	1	24	25	...	...	...	...	...	...	...	...
Total ...	300	2797	3097	82	285	367	417	1157	1574	42	414	456	397	431	738	8	29	37	37	37

Other investigations 15, 12 cerebro spinal fluid, milk, urine and faeces, water, etc.

It is but a limited number of diseases which are made the subject of special administrative measures, and of these we may consider, in the first instance, measles.

### MEASLES AND GERMAN MEASLES.

The actual numbers notified were in the respective quarters of 1918 :—

Diseases Notified	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total
Measles . . . . .	2,978	3,590	831	1,049	8,448
German Measles . .	172	420	66	17	675

It will be seen from the figures given below that in 1918 the fatality rate from Measles was not quite 2 per cent.

The deaths from Measles in successive years are shown in the following table :—

TABLE I.

#### DEATHS FROM MEASLES IN THE CITY OF MANCHESTER.

Years	Under One Year			Years of Age				Total 5 Years and upwards	Total deaths at all ages
	Under 3 Months	3-5 Months	6-11 Months	1-	2-	3-	4-		
1908	16	57	742	1470	599	338	168	168	3558
1909	2	6	78	164	58	37	16	35	396
1910	2	2	76	118	39	21	15	18	291
1911	1	7	73	152	47	30	16	11	337
1912	4	8	99	163	88	58	38	32	490
1913	5	3	62	98	37	20	19	15	259
1914	1	3	62	127	54	19	9	18	293
1915	1	5	98	215	64	29	20	15	447
1916	3	2	37	80	28	12	8	9	179
1917	0	5	62	98	55	24	17	16	277
1918	0	2	38	55	26	21	13	11	166

would be unwise to claim the great reduction in mortality which is manifest in the figures in 1916-1918 as due entirely to better administration.

It I make no doubt that it was partly due to the work of the Health Visitors.

The deaths in quarters are given in Table 2 below.

It will be seen that the heaviest mortalities occur in the first and second quarters of the year, though one year differs greatly from another. Partly the type of disease changes, partly the mortality is determined by the severity of the season. The causes responsible for these changes are complicated, and at present unfathomed, as may be at once seen by comparing the corresponding behaviour of Whooping Cough with that of Measles. Manifestly it is not simply or mainly a question of seasonal severity. The ever varying elemental changes in the earth and atmosphere may affect these variations directly or indirectly, as they do those of the crops which the soil bears. But we do not at present know. As regards the periodicity of Measles, however, an important research by Dr. John Brownlee throws light on the facts.

TABLE 2—MEASLES, DEATHS IN QUARTERS.

YEAR	1st Quarter	2nd	3rd	4th	Whole Year
1902 .....	67	68	60	47	242
1903 .....	158	104	54	29	345
1904 .....	100	189	83	53	425
1905 .....	41	99	77	13	231
1906 .....	60	266	118	32	475
1907 .....	51	73	50	55	229
1908 .....	116	78	71	101	366
1909 .....	155	164	45	32	396
1910 .....	32	118	71	70	291
1911 .....	48	197	61	31	337
1912 .....	214	211	28	37	490
1913 .....	85	105	58	11	259
1914 .....	37	132	50	74	293
1915 .....	153	224	39	31	447
1916 .....	27	84	31	37	179
1917 .....	134	123	14	6	277
1918 .....	36	55	30	45	166

In Table 3 is given a comparison of Manchester mortality with that occurring in other districts.

TABLE 3.—1918.—MEASLES MORTALITY RATES.—RATE PER 1,000 LIVING, COMPARED WITH MEAN OF FIVE YEARS.

	Mean 1913-17	1918
England and Wales .....	0·28	0·28
96 Great Towns .....	0·36	0·36
London .....	0·36	0·42
<b>City of Manchester</b> .....	0·39	0·22
Manchester Township .....	0·77	0·33
North Manchester .....	0·30	0·20
South Manchester .....	0·33	0·20
148 Smaller Towns .....	0·29	0·25

The distribution of mortality in districts shows that the disease caused the highest death-rates in Bradford (0·95), West Gorton (0·75), Openshaw (0·68), and Crumpsall (0·54).

(Table omitted.)

The above table shows, allowing for different assessments of the population, that in 1918 the death-rate from Measles was in Manchester low as compared with the death-rate of the great towns generally.

### WHOOPING COUGH.

The cases of this disease notified are reached entirely through the schools, and the same disabilities attach to this mode of notification as were experienced in Measles. Notwithstanding, these notifications are useful. The cases are visited and dealt with by the health visitors in the same manner as cases of Measles.

The highest death-rates are in St. George's (1·02), Ancoats (1·00), Beswick (0·81), West Gorton (0·75), and Hulme (0·65). The death-rate for 1918 was above that of the country generally, of the great towns, and equal to that of London. In reality, it was higher taking account of the figure used for population.

TABLE I.

1918.—WHOOPIING COUGH MORTALITY.—RATE PER 1,000 LIVING, COMPARED WITH MEAN OF FIVE YEARS.

	1913	1914	1915	1916	1917	Mean	1918
England and Wales .....	0·14	0·21	0·21	0·16	0·13	0·17	0·29
96 Great Towns.....	0·17	0·25	0·23	0·21	0·15	0·20	0·34
London .....	0·17	0·20	0·25	0·18	0·13	0·19	0·43
City of Manchester ...	0·19	0·38	0·09	0·40	0·06	0·22	0·43
Manchester Township ...	0·19	0·61	0·05	0·76	0·05	0·33	0·90
North Manchester.. ..	0·19	0·33	0·08	0·34	0·05	0·20	0·34
South Manchester .....	0·18	0·35	0·12	0·34	0·07	0·21	0·36
148 Smaller Towns .....	0·13	0·18	0·22	0·14	0·15	0·16	0·25

TABLE 2—WHOOPIING COUGH, DEATHS IN QUARTERS.

Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Whole Year
1909 .....	51	52	17	9	129
1910 .....	56	197	114	30	397
1911 .....	34	56	31	19	140
1912 .....	123	131	32	12	298
1913 .....	24	37	47	31	139
1914 .....	81	140	52	10	283
1915 .....	10	28	11	21	70
1916 .....	82	184	24	10	300
1917 .....	6	5	5	33	49
1918 .....	179	120	28	3	330



## DIARRHŒA.

For a number of years a continued effort has been made to prevent the breeding of flies in horse manure and other collections of refuse, an effort which was strenuously maintained in 1918, notwithstanding many difficulties. The number of deaths from this cause was much the lowest yet reached, and notwithstanding fluctuations in this number from year to year, comparison with other localities in this and previous years seems to point to success in this campaign against flies.

TABLE I.—1918.—DIARRHŒA AND SIMPLE CHOLERA MORTALITY.—

DEATHS UNDER TWO YEARS OF AGE PER 1,000 BIRTHS,  
COMPARED WITH MEAN OF FIVE YEARS.

This table of comparison shows that the Diarrhœa rate in 1918 was below that of the 96 great towns, a remarkable occurrence for Manchester.

	1913	1914	1915	1916	1917	Mean	1918
England and Wales .....	23'41	20'41	18'18	12'47	12'18	17'33	10'99
96 Great Towns .....	29'33	26'09	24'48	16'24	16'14	22'46	14'46
London ..	27'50	27'64	25'01	15'80	18'70	22'93	15'67
<b>City of Manchester</b> .....	30'76	26'85	26'56	19'01	19'00	24'44	9'29
Manchester Township .....	55'43	52'84	46'13	42'58	39'60	47'32	18'20
North Manchester.....	27'22	18'81	20'74	13'81	13'69	18'85	6'87
South Manchester .....	24'08	21'77	23'00	14'04	15'12	19'60	7'78
148 Smaller Towns .....	24'73	19'84	17'15	10'79	10'08	16'52	9'73

The number of deaths in successive years, and their distribution in quarters of the year, are exhibited in the following figures:—

TABLE 2.—DIARRHŒA AND SIMPLE CHOLERA DEATHS IN QUARTERS, 1908-1918

	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	Mean	1918
First Quarter.....	29	19	30	44	49	60	67	49	55	48	45	30
Second Quarter...	29	35	29	50	40	46	53	57	48	30	42	31
Third Quarter.....	423	171	236	958	102	351	290	255	135	140	306	54
Fourth Quarter...	110	43	56	97	81	165	114	127	75	61	93	32
	591	268	351	1149	272	622	524	488	313	279	486	147

The meteorological data given in the following table show that the third quarter was warm and humid :—

TABLE 3.

Third Quarter of the years	Mean Temperature	Rainfall, Inches	Humidity, per cent.	Diarrhœa and Simple Cholera Mortality. Annual Rate (third quarter) per 1,000 living
1891	58 <sup>o</sup> .2	12.8	79%	1.57
1892	57 <sup>o</sup> .0	12.5	78%	2.07
1893	60 <sup>o</sup> .4	10.7	74%	4.95
1894	57 <sup>o</sup> .8	9.0	78%	1.55
1895	60 <sup>o</sup> .4	11.2	77%	4.17
1896	58 <sup>o</sup> .5	9.7	76%	2.93
1897	58 <sup>o</sup> .9	9.7	73%	6.01
1898	60 <sup>o</sup> .1	6.1	74%	6.00
1899	60 <sup>o</sup> .8	7.7	75%	6.96
1900	60 <sup>o</sup> .3	9.6	78%	4.14
1901	61 <sup>o</sup> .9	6.5	74%	6.33
1902	57 <sup>o</sup> .6	5.9	78%	0.88
1903	57 <sup>o</sup> .8	12.3	77%	2.19
1904	60 <sup>o</sup> .2	6.9	73%	4.48
1905	58 <sup>o</sup> .9	9.4	76%	3.89
1906	60 <sup>o</sup> .8	6.2	75%	4.91
1907	58 <sup>o</sup> .5	7.8	77%	0.45
1908	59 <sup>o</sup> .2	10.7	78%	2.61
1909	57 <sup>o</sup> .8	10.4	79%	1.04
1910	58 <sup>o</sup> .1	9.1	79%	1.32
1911	63 <sup>o</sup> .0	6.7	69%	5.48
1912	56 <sup>o</sup> .9	12.3	79%	0.56
1913	59 <sup>o</sup> .4	4.9	80%	1.89
1914	59 <sup>o</sup> .8	9.2	77%	1.57
1915	58 <sup>o</sup> .6	9.5	77%	1.37
1916	60 <sup>o</sup> .2	5.7	79%	0.71
1917	60 <sup>o</sup> .5	10.7	77%	0.73
<b>Mean</b>	<b>59<sup>o</sup>.3</b>	<b>9.0</b>	<b>77%</b>	<b>2.98</b>
1918	59 <sup>o</sup> .6	17.2	79%	0.28

The data in the above table are such as would have led us to expect a high diarrhœal mortality. This, however, was low. The table showing the distribution of diarrhœal mortality is not reproduced. It possesses the feature previously noted that the inequalities in fatality are well marked, as between district and district, and between one year and another.





## OPHTHALMIA NEONATORUM.

BY DR. M. A. C. DOUGLAS-DRUMMOND.

During the year 1918, 711 cases of Inflammation of the Eyes were notified from various sources, and visited by the Eye Nurses.

Of these, 144 were cases of disease in children and adults : 108 suffered from simple Conjunctivitis (9 cases of which had had Measles), 7 from Blepharitis, 6 from Keratitis, 18 from Nebulae Corneae, and 1 from Trachoma. Reported by the Military Authorities—1 from Suppurating Lachrymal Gland, and 3 from Congenital Malformations.

567 cases of Inflammation of the Eyes of newly-born children occurred. Of these, 307 were notified by the medical attendants (either private or at the Royal Eye Hospital) as cases of Ophthalmia Neonatorum. The remaining 260 cases were notified by midwives, but the medical attendants considered them to be cases of Conjunctivitis only.

The following table shows the distribution of cases both as regards the districts in which they occurred and the month of the year. The cases in which the corneae were affected are shown on the first table also.

The largest number of cases of true Ophthalmia occurred in Hulme; St. George's, Chorlton-upon-Medlock, and Ardwick.

The monthly rate of notified cases varies considerably, and there seems no special reason for the rise and fall in numbers. June heads the list, followed by April, July, and August.

TABLE A, 1918.—SHOWING THE NUMBER OF CASES OF OPHTHALMIA NEONATORUM NOTIFIED MONTH BY MONTH IN DISTRICTS.

Month of the Year	January	February	March	April	May	June	July	August	September	October	November	December	Total	Cases not Notified	Cases with Corneal Complications
Ancoats ..	1	1	..	..	2	..	3	1	..	..	..	..	8	11	4
Central ..	..	..	..	1	1	..	..	2	..	..	1	..	5	3	..
St. George's ..	1	3	1	5	..	3	3	2	2	6	1	1	28	56	4
Cheetham ..	..	..	..	..	..	3	2	1	1	1	..	2	7	11	1
Crumpsall ..	..	2	..	..	..	3	3	..	1	1	..	1	12	1	1
Blackley ..	..	..	..	..	..	..	..	2	1	..	..	1	1	1	1
Harpurhey ..	..	..	..	..	..	..	..	2	1	..	..	..	3	10	..
Moston ..	..	1	..	4	..	..	..	1	..	..	..	..	6	3	..
Newton ..	..	1	1	..	..	..	3	2	..	..	2	1	10	14	3
Bradford ..	1	2	1	2	2	2	1	1	1	3	1	..	17	33	1
Beswick ..	1	1	3	3	..	..	..	..	..	..	..	..	8	19	..
Clayton ..	..	..	..	..	..	..	..	..	..	..	1	..	1	1	..
Ardwick ..	1	1	2	..	2	3	2	2	1	1	2	2	19	10	3
Openshaw ..	1	2	2	2	1	3	..	1	2	..	2	1	17	13	1
West Gorton ..	2	1	..	2	2	2	..	1	3	2	2	..	17	5	1
Rusholme ..	..	..	..	1	1	..	..	1	..	1	..	1	5	15	1
Chorlton-upon-Medlock ..	1	2	..	1	2	4	5	1	4	1	2	1	24	4	6
Hulme ..	2	5	4	2	1	2	3	4	6	3	5	5	42	30	6
Moss Side ..	..	..	..	3	3	..	..	..	..	..	1	1	8	4	2
Withington ..	..	..	..	1	..	..	..	..	1	..	1	..	3	4	7
Gorton ..	..	1	2	..	1	5	1	2	..	1	2	2	17	12	4
Levenshulme ..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
CITY ..	11	23	16	27	18	30	26	24	22	20	23	18	258	260	49
Cases with Corneal Complications	2	2	2	7	9	4	3	3	4	6	7	..	49	=	567
													307		

TABLE B—1918. OPTHALMIA NEONATORUM. HISTORY OF MOTHER.

	Age			Parity										Labour		Attendant not present at birth	No. of mothers having had previous cases of Ophth. Neon.	History of yellow discharge	Legitimacy		Definite negligence of attendant Midwife			
	20—25	25—30	35 and Over	Total ascertained	Total	1	2	3	4	5	6	7	8	9+	Not Ascertained				Normal	Abnormal		Legit.	Illegit.	
						1	2	3	4	5	6	7	8	9+										
Notified	68	89	91	53	6	307	92	55	51	26	17	26	15	6	15	4	282	25	54	38	123	293	14	—
Not notified	11	61	68	110	10	260	55	59	21	30	30	11	13	7	25	9	239	21	42	24	56	256	4	—

Total cases notified ... 307  
 Total not notified ... 260  
 ... = 567

Table C shows the day of onset, the attendant at birth, and the place of treatment.

The greatest number of onsets was on the second day of life, and in over one-half of the cases the first signs of disease appeared during the first four days.

Over one-half of the cases were treated by private doctors, and the remainder by the doctors of the Royal Eye Hospital.

In 49 instances there was involvement of the cornea, and 10 of these cases were admitted into the Royal Eye Hospital.

TABLE C—1918. OPTHALMIA NEONATORUM.

	Interval in days between birth and onset										Attended by				Where treated					
	1	2	3	4	5	6	7	8	9	10+	Total	Midwife	Doctor	Midwife and Doctor	Total	Home	Out-Patients at Hospital	In-Patients at Hospital	No Doctor	Total
Notified .....	37	45	44	44	29	17	34	16	13	27	307	214	45	48	307	141	156	10	—	307
Not notified .....	19	50	29	31	26	20	30	17	10	28	260	222	3	35	260	226	10	—	24	260
Total notified cases	...	...	...	...	...	...	...	...	...	...	307	...	...	...	307	...	...	...	...	...
Total non-notified cases	...	...	...	...	...	...	...	...	...	...	260	...	...	...	260	...	...	...	...	...



TABLE D.—CASES WITH INVOLVEMENT OF THE CORNEA.

Right Eye .. .. .	11
Left Eye .. .. .	14
Both Eyes .. .. .	24
	—
	49
	—

Table E shows the results of the 567 cases of *true* Ophthalmia, and of the 260 of conjunctivitis in *newly-born infants* :—

	Complete Recovery	One Eye Lost, Other Normal	One Eye Lost, the other Damaged	Both Eyes Lost	Both Eyes Damaged	One Eye Damaged	Death before recovery	Removed before recovery	TOTAL
Notified .. .. .	300	..	I	I	..	I	3	I	307
Not notified .. .. .	260	..	..	..	..	..	..	..	260
	560	..	I	I	..	I	3	I	567

The number of cases with corneal involvement was 49 in all, and the results are very satisfactory, as 42 have completely recovered.

The case in which both eyes are lost, the child was having treatment when two days old. As the condition did not improve, it was sent to the Royal Eye Hospital on the eighth day and admitted on the ninth.

In the case in which one eye is recorded as lost, the other damaged, the onset was on the second day, when treatment began, and on the fourteenth day the child was sent to the Out-patient Department of the Royal Eye Hospital and admitted four days later.

In the case in which one eye was damaged, the child was taken to the Out-patient Department of the Royal Eye Hospital when two days old, and admitted ten days later.

The one case removed before recovery was reported to the authorities into whose district the family removed.

Total number of cases of Ophthalmia and Conjunctivitis in newly-born infants, and percentage with corneal complications, 1911-1918 :—

Year	No. of Cases	Percentage with Corneal complications
1911	525	7·23
1912	667	11·39
1913	573	12·04
1914	681	9·25
1915	642	7·79
1916	620	6·13
1917	539	6·86
1918	567	8·64

## INFLUENZA.

During the year 1918, Manchester was visited by two destructive outbreaks of Influenza.

In the first outbreak the mortality from this disease began to ascend in the 25th week, and rose swiftly to the 28th. It descended with equal swiftness, and had quite reached normal in the 32nd week. The total number of deaths from the 25th to the 32nd week was 332. The outbreak was very widely diffused, but the type was much less severe than in the second outbreak, which began in the 42nd week, and may be said to have extended to the fourth week in 1919. The progress of this outbreak was slower than that of the first, but the height of fatality attained was far greater. The greatest number of deaths occurred in the 48th week, in which no fewer than 373 deaths were assigned to Influenza. The total number of deaths assigned to Influenza in this period was 1,702.

No sooner had the second outbreak subsided than a third began, which extended from the fifth to the 17th week of 1919, during which time the number of deaths was 936. The highest mortality was experienced in the tenth week, in which there were 206 deaths.

In the first outbreak the male deaths exceeded the female, the former numbering 177, the latter 155. In the second outbreak this relation was reversed, the number of male deaths being 702, of female deaths 1,013. In the third outbreak, also, there were more female deaths than male, but the difference was less. The numbers were: male deaths 444, female 492.

In the first outbreak, lobar pneumonia was a prominent feature; in the second, lobar and broncho pneumonias and bronchitis were all prominent; in the third, bronchitis was an outstanding feature.

The course of the first outbreak was different from those of the second and third, being much shorter, a circumstance probably intimately bound up with the natural histories of the respective outbreaks.

The epidemic curves of the first and second outbreak resembled each other closely, but did not differ much from that of the third outbreak. All were accompanied by waves of increase in deaths from pneumonia, broncho pneumonia, and bronchitis, which waves really represent increased fatality from influenza. Other causes of death were not much affected.

When curves of frequency of deaths at different age-periods are constructed, it is found that they all present a striking peak at ages 25-34. This is totally unlike the behaviour of influenza in previous pandemics, and requires special study. As yet, we do not know whether this is or is not a local phenomenon. Either it indicates something special to this visitation, or it is the result of war conditions. The latter seems unlikely, though it is possible that the aggregation of young adults may have had something to do with it, coupled with the sorting out of less vigorous men. It is, however, fully as prominent a feature in the curves for females as in those for males.

When frequencies of attacks in weeks are plotted out, it is seen that in the first two outbreaks the death-rates were twice as high in the Township as in the other two divisions of the City. In the last outbreak, however, South Manchester suffered as heavily as the Township. There was thus a change in the locality of attack.

When the question of immunity is investigated by reference to individuals attacked, it would appear from a block census carried out for Dr. Carnwath, of the Ministry of Health, as if no immunity had been conferred by one outbreak against those following it.

The figures yielded by the census are otherwise hardly consistent with this view, and it may be that a certain number of individuals are specially liable to attack from this disease. There is, also, the possibility of confusion with allied conditions to be borne in mind,

The comparative degree of severity with which the Manchester Township was visited in the first two outbreaks is that which pertains to pulmonary diseases specially, and would seem to indicate that the high fatality was due to incidence of the disease on the lungs rather than on other organs. This agrees with the post mortem findings.

The measures taken were as follows :—

Within a week of the appearance of the first outbreak, 35,000 handbills of advice were issued, especially to works. The Elementary Schools were closed on July 18th ; instructions were also issued through the Press. The instructions were afterwards re-issued in a somewhat modified form, and 150,000 were subsequently sent out. Advice was frequently sought and given in connection with works and hospitals.

During the first and in the early part of the second outbreak neither were the health visitors employed in visiting cases nor were cases admitted into the Fever Hospital. It was felt that, while the ordinary work would be seriously impaired, no material impression could be made on the disease. The circumstances of the second outbreak were so distressing, however, that these considerations had to give way, and on December 4th the whole strength of the Health Visitors' staff was turned on to visiting and assisting the sick. The Public Health Committee made allowances of food and fuel, and some of the health visitors volunteered to do night nursing in the homes. Their names deserve to be recorded. They were Nurses Appleton, Hall, Oliver, and Sizer.

A ward in Monsall Hospital was opened early in March, 1919, for cases of influenzal pneumonia, and remained open for a month.

The Local Government Board in the course of the second outbreak issued regulations regulating admission to entertainments, which aimed at securing better ventilation. These were duly enforced, and children of school age were for a time excluded.

The Elementary Public Schools were again closed on December 19th till the New Year.

The advice given to the public through the Press included the wearing of masks, and the use of prophylactic vaccines if medically advised. The wearing of masks was not adopted either by the public, nor in the fever hospital, where it was specially advised. Prophylactic vaccine was tried at Monsall Hospital. Only five nurses volunteered, and one developed influenza 15 days afterwards.

So far as one can judge at present, in checking further outbreaks, it will be necessary to rely chiefly on general preventive measures. The measures alluded to include the maintenance of a reasonable distance between the sick

and the healthy, care of the hands, avoidance of common towels and common soap, careful washing out of common basins, avoidance of the handling in common of food to be afterwards cooked, and other like precautions ; above all, the immediate segregation of persons attacked.

In other ways the same measures should be pursued as have been already found useful.

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## THE VENEREAL DISEASES SCHEME.

STATEMENT OF THE WORK CARRIED OUT IN 1918, PREPARED FOR THE MEDICAL OFFICER OF HEALTH BY DR. W. A. YOUNG, WITH THE ASSISTANCE OF THE DEPUTY CITY TREASURER.

In pursuance of the Public Health (Venereal Diseases) Regulations, 1916, a scheme for treating Venereal Diseases was drawn up and submitted to the Council in April, 1917. This scheme, which provided for the establishment of venereal disease clinics at the Manchester Royal Infirmary, Ancoats Hospital, the Manchester and Salford Skin Hospital, and the Manchester and Salford Lock Hospital, was fully explained in the annual report of 1917.

Briefly stated, the scheme provided for the diagnosis and treatment of venereal diseases, as follows :—

### APPROVED TREATMENT CENTRES.

(1) *Manchester Royal Infirmary.*

There were four clinics held at this institution each week, at which all venereal diseases were dealt with.

(2) *Ancoats Hospital.*

There were four clinics held each week at this institution. All forms of venereal disease were examined and treated.

(3) *Manchester and Salford Skin Hospital.*

There were six clinics held at this hospital during each week. Syphilis only is treated at this institution.

(4) *Manchester and Salford Lock Hospital.*

Five clinics were held each week at this institution, and all forms of venereal disease were dealt with.

The days and hours of the clinics at the four centres, along with the Consulting Medical Officers, are shown below.

MANCHESTER AND SALFORD APPROVED CENTRES FOR THE TREATMENT OF VENEREAL DISEASES.			
Institution .....	Royal Infirmary, Oxford Road, Manchester	Salford Royal Hospital, Chapel Street, Salford	Ancoats Hospital, Mill Street, Ancoats, Manchester
Day and Hour of Attendance	<p>Skin Clinic— Thursday ... 11-0 a.m. to 1-0 p.m. Wednesday ... 6-0 to 8-0 p.m.</p> <p>Genito-Urinary Clinic— Wednesday ... 11-0 a.m. to 1-0 p.m. Thursday ... 6-0 to 8-0 p.m. Capt. F. E. Tylecote, R.A.M.C., M.D., M.R.C.P. Major Wilson, R.A.M.C., L.R.C.P., F.R.C.S. Assistant Medical Officer:— J. Holker, M.Sc., M.B., Ch.B. (Vict.)</p>	<p>Skin Department— Monday ..... 12-0 noon Thursday ... 6-0 p.m.</p> <p>Special Genito-Urinary Clinic— Tuesday ..... 12-0 noon Friday ..... 7-0 p.m. Capt. Wm. Dyson, R.A.M.C., M.D., Ch.B. (Vict.) Robert Gibson, M.D., Ch.B. (Edin.) Capt. J. Barlow Macalpin, R.A.M.C., M.B., Ch.B. (Vict.) J. E. Lezama, L.R.C.P., L.R.C.S. (Edin.), Clinical Assistant.</p>	<p>Skin Diseases— Wednesday 11-30 a.m. to 1-0 p.m. (females). Wednesday ... 5-30 to 7-0 p.m. (males).</p> <p>Genito-Urinary Diseases— Wednesday ... 11-30 a.m. to 1-0 p.m. (females.) Wednesday ... 5-30 to 7-0 p.m. (males.) Capt. W. R. Douglas, F.R.C.S. In Capt. J. Morley, F.R.C.S. Turns. Capt. W. J. S. Keid. Dr. Edgar Lea.</p> <p>Assistant Medical Officer— Dr. J. F. O'Grady, L.A.H. (Dublin).</p>
Institution .....	Hospital for Skin Diseases, Quay Street, Manchester	Lock Hospital, Duke Street, Liverpool Road, Manchester	
Day and Hour of Attendance	<p>Daily except Sunday— For men ..... 9-0 to 10-0 a.m. For women and children— 9-0 to 11-0 a.m. G. H. Lancashire, M.R.C.S., L.R.C.P. L. Savatard, L.S.A. (Londl.) W. Dyson, M.D. R. Gibson, M.D.</p>	<p>Monday . . . . . Tuesday ..... Wednesday ... } 5 to 7 each evening. Thursday ..... Friday ..... Major Wilson, R.A.M.C., L.R.C.P., F.R.C.S. Dr. A. J. Edwards, M.D. (Latterly) Dr. W. J. S. Reid, M.D.</p>	

Secrecy at the clinics has been observed as far as possible, but this has been attained with only fair success at the morning clinics at the Royal Infirmary and Ancoats Hospital, when the out-patient departments at these hospitals are open for the examination and treatment of all conditions. At the Skin Hospital, where the patients are seen amongst the general body of out-patients, the condition of secrecy was a little better maintained. At the Lock Hospital there can be no attempt at secrecy.

At each clinic the patients were examined, specimens taken for pathological examinations if necessary, their condition diagnosed, and treatment commenced. A history and record of treatment of each case was kept by the Medical Officer in charge of each centre.

Married patients, after investigation as to the health of their partners, were strongly advised to have their partners examined, and treated if necessary.

#### MEDICAL PRACTITIONERS AND THE SCHEME.

On request, Medical Practitioners in Manchester were supplied with outfits with which to collect specimens for examination, and, after the examinations were made, reports were furnished free of cost.

On application to the Medical Officer of Health, approved Salvarsan substitutes were supplied free to any Medical Practitioner in Manchester who fulfilled one or other of the following conditions prescribed by the Local Government Board :—

(a) Holds a certificate of having satisfactorily fulfilled the duties of Clinical Assistant in a hospital department recognised by the Local Government Board in connection with a Local Authority's Scheme for the diagnosis and treatment of venereal diseases in their communicable stages.

(b) Holds a certificate of satisfactory attendance at a course of instruction in the diagnosis and treatment of venereal diseases (including intravenous medication) in such a hospital department or in a recognised medical school or post graduate college.

(c) Is or has been within the last five years a member of the permanent staff of a hospital managed by a committee, and containing not less than 50 beds.

(d) Produces satisfactory evidence, other than that indicated in the foregoing paragraphs, that he has adequate experience in the administration of these drugs by intravenous injection.

Medical Practitioners attended the several clinics at all of the approved institutions for instruction in the modern diagnosis and treatment of venereal diseases.

#### PATHOLOGICAL ARRANGEMENTS.

Professor Delépine at the Public Health Laboratory, and later Professor Dean at the Pathological Laboratory of the University of Manchester, carried out the Wassermann reaction, and the examination of discharges, etc., for the presence of *spirochaeta pallida* or the gonococcus for all Medical Practitioners in Manchester who wished to have their patients thus examined.

These examinations were made free of cost to the patients and practitioners.

The examinations of discharges at the Royal Infirmary were made by a trained microscopist who attended during the clinics, but the Wassermann tests were carried out by Professor Dean at the University. At the Lock Hospital the examination of discharges was carried out by the Medical Officer of the clinic, the Wasserman examinations were carried out by Professor Dean. All pathological examinations at the Skin Hospital and Ancoats Hospital were performed by the pathologists of the respective institutions.

#### PUBLICITY.

Medical Practitioners were notified by two circular letters of all arrangements made, and, at the same time, copies of the various forms to be used were enclosed. Handbills giving advice and instructions to patients were printed and distributed at the clinics. Posters were displayed in all the public conveniences in the City. The scheme was advertised twice in the local newspapers by the Corporations of Manchester and Salford. A local branch of the National Council for Combating Venereal Diseases was formed, as already recorded.

#### FINANCE.

The expenses incurred with the approval of the Local Government Board were defrayed as to 75 per cent. by the Government and as to 25 per cent. by the Corporation.

#### SUMMARY OF WORK DONE UNDER THE VENEREAL DISEASE SCHEME DURING THE YEAR 1918.

##### *Approved Treatment Centres.*

At first, the preparing and the rendering to the Medical Officer of Health of quarterly returns of work done at the centres was accompanied by certain difficulties, with the result that some of them were subject to alterations. Towards the end of the year, as the work proceeded, the returns were more reliable. The information thus obtained is shown in the following tables :—



TABLE I.—NEW CASES.

SHOWING THE NUMBER OF NEW CASES PRESENTING THEMSELVES AT THE VENEREAL DISEASE CENTRES DURING THE YEAR 1918.

Period	* Manchester Royal Infirmary			Ancoats Hospital			Manchester and Salford Hospital for Skin Diseases			Manchester and Salford Lock Hospital			Total No. of New Cases at the four Centres (All Cases)	
	Sy.	S.C.	G.	Sy.	S.C.	G.	Sy.	S.C.	G.	Sy.	S.C.	G.		Not V.D.
Quarter ending March 31st—														
Manchester Cases	85	5	46	79	0	16	45	75	0	5	11	6	100	11
All Cases	152	5	59	97	0	21	48	143	0	5	22	11	135	13
			292			166				170			295	
Quarter ending June 30th—														
Manchester Cases	66	5	25	79	0	25	25	70	0	5	6	6	123	14
All Cases	109	7	35	100	0	27	28	153	0	5	14	10	175	18
			196			155				172			361	
Quarter ending Sept. 30th—														
Manchester Cases	62	0	36	61	0	23	21	78	0	5	14	5	107	13
All Cases	92	0	40	67	0	27	23	131	0	8	23	15	146	15
			132			117				162			297	
Quarter ending Dec. 31st—														
Manchester Cases	61	0	25	66	0	36	28	38	0	12	15	6	97	11
All Cases	97	0	34	83	0	44	36	105	0	18	25	8	139	15
			150			163				148			302	
Total for year ending Dec. 31st, 1918—														
Manchester Cases	274	10	132	285	0	100	119	261	0	27	46	23	427	49
All Cases	450	12	168	347	0	119	135	532	0	36	84	44	595	61
			770			601				652			1,255	

\* The return from Manchester Royal Infirmary for quarter ending March 31st embraces the period from December 31st, 1917, to March 31st, 1918.

† Sy. = Syphilis, S.C. = Soft Chancre, G. = Gonorrhoea. Not V.D. = Not Venereal Disease.

It will be observed that the number of new cases presenting themselves at the four centres was pretty well maintained during the first two quarters, but that there was a falling-off in the numbers in the third quarter. This may probably be accounted for by the fact that influenza was prevalent in the City at that time. There was a slight rise in the numbers in the last quarter of the year, but again influenza may have to a certain extent affected them. The number of new cases suffering from Syphilis and Gonorrhœa at the approved centres during the year was 1,894 and 908 respectively. As was pointed out in the last year's report, the relatively small number of gonorrhœal patients presenting themselves for treatment is very disappointing. The most probable causes for this poor attendance of gonorrhœal patients may be expressed as follows:—

(1) For a long time this disease has been considered of little importance when compared with Syphilis.

(2) The presence of this disease is more easily hidden than Syphilis.

(3) In females it may cause comparatively little inconvenience, and by some it is mistaken for other conditions.

(4) The many conditions resulting from neglected Gonorrhœa are not sufficiently appreciated by the bulk of the people, who generally regard such manifestations as separate complaints altogether.

(5) The relationship between Gonorrhœa and Sterility is not fully realised.

(6) The results of treatment in Syphilis show themselves much more clearly and sooner than do those in Gonorrhœa, so that it was to be expected that a greater success would at first attend the treatment of Syphilis than of Gonorrhœa. It is probable that, as gentlemen come forward who are prepared to devote their energies and time to the treatment of Gonorrhœa, progress will be accelerated.

TABLE II.

CLASSIFICATION ACCORDING TO SEX.—NEW CASES, YEAR 1918.

*Syphilis and Gonorrhœa only.*

	MANCHESTER				OTHER DISTRICTS			
	Syphilis		Gonorrhœa		Syphilis		Gonorrhœa	
	M.	F.	M.	F.	M.	F.	M.	F.
*Manchester Royal Infirmary ...	156	118	98	34	101	75	32	4
Ancoats Hospital .....	147	138	79	21	26	36	17	2
Hospital for Skin Diseases .....	107	154	21	6	133	138	8	1
Manchester and Salford Lock Hospital .....	219	90	378	49	171	75	80	88

\* The return from Manchester Royal Infirmary for Quarter ending March 31st embraces the period from December 5th, 1917, to March 31st, 1918.

• In Table II. the relative proportions of male and female patients presenting themselves for treatment is shown.

Among the Syphilis patients the proportion of females to males is well maintained at all the centres except at the Lock Hospital. This may be explained by the fact that it is impossible to observe secrecy at this institution.

Among the Gonorrhœal patients, the proportion of females to males is not nearly so well maintained, but there are indications that this state of affairs may improve.

In Table III. the total attendances of patients at all the centres for the year is shown as being 36,446, and the number of doses of Salvarsan substitutes administered as 9,148.

The relatively high number of attendances at the Skin Hospital is accounted for by the fact that Syphilis only is treated there, and that patients are kept under treatment for a long time and then undergo a prolonged course of observation before being discharged. This also accounts for the small number of cases discharged after the full course of treatment at this centre compared with the numbers discharged at other centres (*see* Table V.).

Table IV. shows the number of pathological examinations made either at each centre or by the pathologist of the hospital at which the centre is, and, also, the pathological examinations made by Professor Dean at the University laboratory. It also shows the number of attendances of patients at each centre for the year 1918. The number of Wassermann reactions has gradually increased each quarter, as has also the examinations for Gonococci.

The number of examinations at the Lock Hospital is lower than at any of the other centres. No examinations for *Spirochæta pallida* have been made at this institution, as no microscopist was appointed to attend during clinic hours, and the Medical Officer had no time to devote to this work.

Table V. is a general summary of the work done during the year 1918.

The number of Syphilitic patients discharged after completion of treatment at the Royal Infirmary and Ancoats Hospital correspond, but at the Lock Hospital the numbers are greater.

At the Skin Hospital, as has been explained, the number of discharges is small, but will now increase from month to month. There is a considerable number of patients who cease to attend at the centres before their treatment is completed. This is a serious matter for the patients, and very discouraging to the medical staffs of the centres. It is a question which is very difficult to tackle, as there is no means of compelling the patients to attend, and by corresponding with them there is the possibility of exposing their condition.







In certain cases this latter course was adopted by the staff of the Skin Hospital with fairly encouraging results, and more recently this method has been carried out at the Royal Infirmary and Ancoats Hospital, but is, of course, impossible at the Lock Hospital.

*Medical Practitioners and the Scheme.*

At the end of 1917 there were 25 Medical Practitioners who were qualified to receive Salvarsan substitutes free of cost.

During the year 1918 four qualified, and on December 31st, 1918, there were 27 names on the list.

The quantity of Salvarsan substitutes issued to Medical Practitioners during the year was as follows :—

	Doses
Quarter ending March 31st .. .. .	704
„ „ June 30th .. .. .	765
„ „ September 30th .. .. .	801
„ „ December 31st .. .. .	758
	<hr/>
Total for year 1918 .. .. .	3,028
	<hr/> <hr/>

For the collection of specimens for examination, “Outfits” are issued to Medical Practitioners as follows :—

(a) Tubes, etc., to collect material for Wassermann reaction.

(b) Glass slides, etc., to collect material for microscopical examination.

The number of “Outfits” issued to Practitioners during 1918 were as follows :—

	Wassermann	Microscopical
Quarter ending March 31st .. .. .	346	23
„ „ June 30th .. .. .	299	1
„ „ September 30th .. .. .	233	40
„ „ December 31st .. .. .	344	17
	<hr/>	<hr/>
Total for year 1918 .. .. .	1,222	81
	<hr/> <hr/>	<hr/> <hr/>

## PATHOLOGICAL WORK DONE DURING 1918:—

(a) *At or in connection with approved Centres* (see Table IV.).(b) *Medical Practitioners and Institutions other than approved Centres.*

Number and results of the examinations of specimens forwarded to the Public Health Laboratory, and later to the University Laboratory during the year 1918:—

(1) *Wassermann reaction.*

	Positive	Negative	Doubtful	Total
(a) Medical Practitioners' cases .. ..	224	328	0	552
(b) Institutional cases .. .. .	4	8	1	13
Total for the year.. ..				565

(2) *Microscopical Examinations for Gonococci.*

	Positive	Negative	Doubtful	Total
(a) Medical Practitioners' cases .. ..	17	50	3	70
(b) Institutional cases .. .. .	0	4	0	4
Total for the year .. ..				74

(3) *Microscopical Examinations for Spirochaeta pallida.*

	Positive	Negative	Doubtful	Total
(a) Medical Practitioners' cases .. * ..	0	1	0	1
(b) Institutional cases .. .. .	0	0	0	0
Total for the year.. ..				1

## PUBLICITY:—

*Work of the Local Branch of the National Council for Combating Venereal Diseases.*

The work of this branch of the National Council was carried on by the Executive Committee and the Social Work and Finance Sub-Committees. The Executive Committee and the various Sub-Committees met regularly every month or more frequently.



A report, giving an account of the work carried out by the branch, was published in the spring of 1919. Public meetings were held during the year, when important and educative addresses were delivered. Four lectures were given at the University for the benefit of likely lay lecturers on venereal diseases, and other interested persons.

Male and female medical lecturers have addressed meetings at various works and institutions throughout the City. These addresses have been greatly appreciated, and, in many instances, letters of thanks were received from firms at whose works the meetings had been held.

The following is a list of meetings held during 1918 :—

Works, etc.	No. of Lectures	No. Present
Mather and Platt .. .. .	2 (to males)	850
Collyhurst Mothers' Welcome .. ..	2 (to females)	180
S. and J. Watts .. .. .	2 (to males)	45
	1 (to females)	40
Walton House .. .. .	1 (to males)	55
Ashton House .. .. .	1 (to females)	60
Levinstein's .. .. .	2 (to males)	52
	1 (to females)	100
West's Albion Iron Works .. .. .	1 (to females)	60
Abel Heywood's .. .. .	1 (to males)	50
	1 (to females)	87
National Association of Trade Union of Approved Societies .. .. .	1 (mixed)	34
Armstrong Whitworth, and Co. .. ..	3 (to males)	760
	2 (to females)	525
William C. Jones Limited .. .. .	1 (to males)	55
	1 (to females)	175
Adams and Company .. .. .	1 (to females)	95
Arthur Smart and Sons.. .. .	1 (to males)	35
	2 (to females)	300
Charles Austin and Sons .. .. .	2 (to females)	230
Richard Haworth and Company .. ..	2 (to males)	55
	2 (to females)	220
Police .. .. .	8 (to males)	Large
Salford Corporation Model Lodging- house.. .. .	1	100
Joseph Cookson and Company .. ..	1 (to males)	50
	1 (to females)	25
Union Chapel .. .. .	1	200
Lewis's .. .. .	1 (to females)	14
School for Mothers .. .. .	3 (to females)	142
Zion Chapel .. .. .	1	150
Faculty of Insurance .. .. .	1 (to males)	30
Pharmaceutical Society .. .. .	1	Large

*Finance.*

A statement prepared by the City Treasurer shows that the total net expenditure on the scheme for the year 1918 was as follows:—

	£	s.	d.
Manchester Royal Infirmary .. .. .	3,744	8	5
Ancoats Hospital .. .. .	1,972	8	3
Hospital for Skin Diseases .. .. .	2,591	10	9
Lock Hospital .. .. .	2,522	7	9
Salvarsan Substitutes supplied by Medical Officer of Health to Medical Practitioners .. .. .	648	11	9
Manchester University Pathological Department ..	473	11	1
Grant to National Council for Combating Venereal Diseases .. .. .	500	0	0
Printing, Stationery, etc. .. .. .	77	12	10
	<hr/>		
	£12,530	10	10
	<hr/>		

To arrive at the figure for apportionment between the various Local Authorities having cases treated at the centres, the following deductions have to be made:—

	£	s.	d.
Net Expenditure .. .. .	12,530	10	10
DEDUCTIONS:—			
(1) <i>Lock Hospital</i> —	£	s.	d.
Amounts paid in 1918 relating to 1917..	393	12	10
Less—To be recovered from subscriptions in respect of capital expenditure ..	251	2	6
	<hr/>		
	142	10	4
(2) <i>Items not Apportionable</i> —			
(a) Grant to National Council for com- bating Venereal Diseases .. .. .	500	0	0
(b) Printing, Stationery, etc. .. .. .	77	12	10
	<hr/>		
	720	3	2
	<hr/>		
	£11,810	7	8
	<hr/>		

the result being that £11,810 7s. 8d. is the amount for apportionment, and, on apportionment, £8,233 1s. 2d. falls on Manchester—the remainder, £3,577 6s. 8d. on a number of external local authorities.

To the above may usefully be added a statement of the venereal disease work done at the Crumpsall Infirmary under the Poor Law Venereal Diseases Scheme,

*Extract from the Report on the Work Done at the Venereal Department at the Crumpsall Infirmary (Manchester Union) during the year 1918.*

The Medical Superintendent of the Crumpsall Infirmary reports that the work at the Venereal Department has again increased during the year.

The increase is partly due to the greater prevalence of venereal disease, partly to the fact that 11 other Unions have made agreements with the Manchester Board of Guardians for the treatment of their cases at Crumpsall, and again that people are becoming aware of the importance of having these diseases treated.

ADMISSIONS:—

*Total Admission.*

	Syphilis	Soft Chancre	Gonorrhœa
Males .. .. .	111	9	39
Females .. .. .	175	0	129

*Admissions of Patients from other Unions (included in above figures).*

	Syphilis	Soft Chancre	Gonorrhœa
Males .. .. .	31	3	8
Females .. .. .	40	0	15

*Persons Treated with Approved Salvarsan Substitutes.*

	Manchester Union	Other Unions
Total number—Males .. .. .	66	29
Females .. .. .	114	36

Total number of injections of Salvarsan substitutes has risen from 873 in 1917 to 1,224 in 1918.

*Pathological Examinations.*

(a) Number of Wassermann examinations carried out at Manchester University totalled 431.

(b) Examinations carried out at Venereal Department of the Infirmary—

    For detection of Spirochætes .. 56

    For detection of Gonococci .. 240

## STILLBIRTHS AND ABORTIONS.

*Table showing the number of Still-births and Abortions.*

	Syphilis	Gonorrhœa
Mothers—Still-births . . . . .	5	4
Abortions . . . . .	2	2

In all of the above cases the mothers had had no treatment prior to delivery.

### ON AN OUTBREAK OF ANTIMONY POISONING FROM SELF-RAISING FLOUR.

On November 30th, 1918, Professor Delépine informed the Manchester City Police that samples of food prepared with self-raising flour which he had received from the Salford Public Health Office on the same day showed the presence of arsenic in large amounts. The self-raising flour was bought originally from a Company in Manchester, which may be called A. Mr. Fisher, of the Police, followed the manufacturer to his private residence outside the City, and found him away from home, but took the manageress down to the works, the proprietor following later. Later on in the afternoon, Professor Delépine and the Police informed the Medical Officer of Health of the above facts. Proceeding to the works, the Medical Officer of Health found Detective Inspector Fisher and Sergeant Cooke at the works, also the proprietor, his sister, and the manageress.

The composition of the flour prepared at the factory was stated to be—

6½lb. acid phosphate	} to make 293lb.
3¼lb. bicarbonate of soda (called carbonate)	
3¼lb. rice flour	
280lb. flour	

The ingredients are mixed together in a mill, a small scoop being used for the acid phosphate, bicarbonate, and rice flour, a large one for the flour. After mixing, the self-raising flour is passed down a chute to a room below and into a trough, where it is put up into 1lb. bags, and labelled in two lots as issued under two different trade names. The sources of the flour, acid phosphate, bicarbonate, and rice flour were ascertained, and a general inspection was made of the premises. Samples were taken from a keg of acid phosphate opened on November 29th, 1918, and from an unopened keg; also samples of bicarbonate, rice flour, and three samples of ordinary flours. The acid phosphate

was in kegs containing 1 cwt. each, the bicarbonate of soda in kegs containing 2 cwt., the rice flour and plain flour in bags of 280lbs., so that the bicarbonate kegs and the rice bags would last much longer than the acid phosphate kegs.

Clearly, the urgent matter was that the proprietor should get into touch with all the persons who had purchased materials from him, and recall all flour already issued which could be recalled. Arrangements were, therefore, made for letters to be dispatched to all customers both inside and outside of Manchester so as to reach them on Monday morning, and for lists to be placed in the hands of the Public Health Authorities of the various districts to which the self-raising flour was supplied, so that they might ascertain that notice had been given. As the clientele was a large one, this was a strenuous business. A list was furnished of Manchester customers, who were visited by the Sanitary Inspectors.

It was stated that the flour was supplied chiefly to Manchester (Ardwick and Chorlton-upon-Medlock), Eccles, Swinton, and to Salford (Pendlebury and Pendleton, and Lower Broughton).

As afterwards appeared more clearly, the poisonous ingredient was issued while the keg of acid phosphate, opened on September 25th, 1918, or an earlier one, or both, were being used.

The acid phosphate was supplied through an agent (B), but, in fact, never passed through his hands, and was transmitted direct from another firm in Manchester (C), although it was manufactured in a distant City (D). Inspector Higginbotham visited on December 2nd, and ascertained that on this brokerage the agent (B) made a profit of about £43, the amount purchased through him having been 20 kegs of 1 cwt. each. No guarantee was given by any of the parties concerned, and the invoice from the original manufacturer runs: "Ordinary cream powder (unguaranteed)." This becomes of special interest, because Professor Delépine's view from an early period was that the acid phosphate probably contained the poisonous material in bulk. The self-raising flour was used to make pies, tarts, cakes, thicken soups, etc., and samples taken in connection with illness were submitted to Professor Delépine by the Salford Health Authority, on which he made a preliminary report on December 2nd. A second preliminary report on December 4th dealt with samples collected at A and sent in by this Public Health Office. Only on December 3rd were the first cases of illness reported in Manchester. 14 persons, in two families, were taken ill after partaking of materials made with the self-raising flour on December 1st and December 2nd. The materials were purchased on November 30th from the retail shop.

On November 29th, however, another family of six was taken very violently ill, with diarrhœa and acute pain, after eating a pie made with the self-raising flour.

On December 4th, Professor Delépine reported on a number of specimens submitted to him, taken chiefly by the Medical Officer of Health at the works A, and reported them free from arsenic.

On December 5th, 1918, a further report was made by Inspector Higginbotham, which contains important statements. There seems to be no doubt that no complaints or illness existed prior to the receipt of the 20 kegs of acid phosphate on November 12th. The tops of the kegs obtained from C were broken, and the motor driver signed for them "received in bad condition." The material was at once put into use. On November 19th the proprietor of A received a number of complaints in the Levenshulme district that pastry made with the self-raising flour was streaked and spotted with yellow apparently, and tasted bitter. But no mention was made of illness. This must not be made too much of, as this outbreak was in part obscured by the coincident influenza. The large business done by A is shown by the fact that between November 12th and November 30th, 18 $\frac{3}{4}$  cwts. of acid phosphate were used.

On Wednesday, December 4th, Inspector Higginbotham called at the factory A and took scrapings from all the kegs of acid phosphate delivered from C which had been used. This covered all the kegs except those from which the Medical Officer of Health had already taken samples, and the number was 18. There were, also, at the office, samples of pastry and flour from 38, King Street, Hulme, and 77, Higher Ardwick, which had caused severe illness in the families living at those addresses. On December 5th, Dr. W. Vernon Shaw called on behalf of the Local Government Board and took with him all these samples, except portions of the pastry and flour. Also he took at the works samples of baking powder, egg powder, and custard powder. These were submitted to analysis at the Local Government Board.

No material amount of poisonous matter was found in the other samples, but in the samples taken at the affected houses antimony was found to be present in considerable amounts, probably as tartar emetic, and of this the Medical Officer of Health was informed in a confidential communication dated December 9th. On December 11th, he received from Professor Delépine a communication stating that the poisonous material was found to be antimony, probably as tartar emetic. On that date the Medical Officer of Health visited the wholesale merchant C, and received from him a promise to trace the railway journey of the kegs, and to ascertain whether they could have been broken on the way by contact with other goods. This promise was carried out, and an assurance given that no other goods had been carried in the truck, which had been put on at the manufacturers. There was, thus, no apparent reason why the kegs should have been handed over by C in a broken condition.

On December 11th the Medical Officer of Health visited a family which had been attacked after eating pastry made with the self-raising flour. The

intervals between eating the pastry and the onset of symptoms were 50 minutes, 1 hour, 1 hour, 1 hour, 1½ hours, 1½ hours. The duration of the acute illness in two cases was 3 hours, and recovery was complete either after a short period or some days after. The symptoms were burning sensation in the throat, vomiting, pain in the stomach, acute thirst, severe and repeated diarrhœa (without straining), severe depression. In three of the above, however, there was no diarrhœa.

A similar record was made by Inspector Higginbotham for other families. He calls attention in one case to a bitter taste in the mouth on partaking of pastry. Histories of illness were also obtained by other inspectors.

The Medical Officer of Health verified that the contaminated flour had a metallic and astringent taste.

Assuming that tartar emetic might have been introduced in mistake for cream of tartar, it is a question where this could have occurred. The maker of the self-raising flour would not be likely to use cream of tartar instead of acid phosphate, and asserts that he has not lately had cream of tartar in his establishment. But he may have had remains of an old consignment, though that should not have occurred.

On December 14th, a statement was received from Mr. Laskey, the Chief Sanitary Inspector for Eccles, which, like our own previous information about Levenshulme, produces doubt as to whether the poisoning can be confined to one keg of acid phosphate. Thus, in two instances the materials were sold on November 20th, and would probably be from the same stock as the Levenshulme material, which was manufactured on November 13th. In another case, not so clear, the purchase was on November 24th. But, apparently, there is a gap between the early occurrences and the severe outbreak—a very singular fact, when it is remembered that there was no trace of antimony in the scrapings of the kegs of acid phosphate. The whole trouble appears to have arisen, however, after the consignment of acid phosphate on November 12th. But it must be observed that the early occurrences in Levenshulme and Eccles escaped attention altogether, and it is not certain that these are the only occurrences which have escaped notice. Mr. Laskey mentions 71 cases of illness in 22 households. With the exception of three of these instances the flour implicated was stated to have been delivered in Eccles on November 25th. In Manchester, altogether, 100 cases in 22 families were ascertained, and, taking into account occurrences in Salford, Swinton, etc., probably not less than 300 cases were heard of. No death is known to have taken place. The actual number of illnesses which occurred may be taken to have been at least twice as many.

On December 17th, further investigations were made by Dr. Vernon Shaw, from which, *inter alia*, it appeared that between C and D was an intermediate agent, who received a commission. It would be interesting to know the original

cost of production of this acid phosphate. On December 17th the proprietor of A wrote asking to be permitted to use the returned flour for making paste, which was given under stringent conditions. It was, however, settled that before doing so Inspector Higginbotham should call and apply to the flour returned to him from shops a simple test to determine its constitution as regards antimony. The flour from each 1lb. bag was made into a paste and a little sulphuretted hydrogen water painted over it. If antimony was present, yellow spots and streaks appeared, passing into orange. This was the appearance obtained by pouring the sulphuretted hydrogen water on flour mixed with tartar emetic, as determined by the Medical Officer of Health beforehand.

It is probable that a graduated scale of quantities could be roughly constructed in this manner.

Mr. Higginbotham thus examined 407 specimens and obtained 29 +ve results, of various grades.

The total amount of flour returned from shops was about 16 tons.

An effort was made to assess the amount of tartar emetic which must have been added to the flour, and this was roughly estimated at over 20lbs.

On December 13th, a communication was received from the Local Government Board, giving the results of samples received from the Public Health Office, Manchester, consisting of

No. 118. Pastry from house  $\alpha$

No. 119. Pastry from house  $\beta$

No. 120. Flour from house  $\gamma$

Nos. 121-139. Scrapings from empty kegs of acid phosphate.

No. 140. Acid phosphate, full keg.

Nos. 141-3. Flour, baking powder, egg powder, and bun flour, all taken from A.

Twelve 1lb. bags from the returned dump.

The results were :—

			Percentage of Antimony as Tartar Emetic
No. 118	..	..	0·365
No. 119	..	..	0·385
No. 120	..	..	0·453

All the scrapings of kegs were free from antimony.

Of the 12 returned bags, only one contained antimony, and that in much smaller amounts than had been already found.



The results of the Government analyst are thus summed up :—

- (1) The pastry is contaminated with antimony and not with arsenic ;
- (2) A mixture of tartar emetic and acid phosphate has been employed in the preparation of the self-raising flour No. 120 used in making pastry, sample No. 119 ;
- (3) It is probable from the quantity of antimony found that a portion of the same contaminated flour was used in making pastry No. 118 ;
- (4) There is no evidence that the mixture of tartar emetic and acid phosphate was contained in any of the kegs on the firm's premises, although this does not exclude the possibility of the presence of a " pocket " of tartar emetic at the top or in the middle of one of the kegs ; and
- (5) The flour returned on the 30th November has not been made up with the same mixture.

On January 2nd, 1919, a communication was sent to the firm supplying the bicarbonate of soda, and information invited. It may almost be assumed that, as delivered, this material has not contained tartar emetic.

A letter was also sent to the firms manufacturing acid phosphate (D) and supplying rice, and, in this way, D were warned at the beginning of the outbreak.

On January 3rd, 1919, Inspector Higginbotham presented a report on the later developments. It appears that the makers of acid phosphate (D) have two branches, or that there are two firms trading under one name, and that one of the branches, *inter alia*, deals in tartar emetic. But no evidence has been obtained connecting the branch producing the acid phosphate with the branch dealing in tartar emetic. In fact it is denied that tartar emetic could have been present in the former works, and it may be assumed that no tartar emetic could have landed at the acid phosphate works except by mistake. The Railway Company declined to give information on account of the time which it would take to collect. Equal care was bestowed on the possibility that tartar emetic might have been used instead of bicarbonate of soda, and a visit was paid to the works from which the latter salt was obtained. From the information then obtained it was concluded that any mistake in regard to bicarbonate could only have been made at the flour-making works. Tartaric acid is used at these works, but in such a manner as to make it difficult for any substitution to have taken place. Two errors would have had to occur : substitution of tartar emetic for tartaric acid, and substitution of tartaric acid for some ingredient in the self-raising flour. As regards the rice, contamination could only have occurred through the use of bags which had previously contained antimony, and, as far as could be judged, the amount of tartaric acid present was too great to allow of this explanation.

A full report of the procedures taken by Professor Delépine, and of his conclusions, was issued by him on January 16th, 1919. This report is too long to be reproduced here, but is of considerable interest, as Professor Delépine points out. As stated by him, he sent his chemical assistant (Mr. Heap) to the works, who collected samples, amongst others, from a small scoop used to take materials from the kegs of acid phosphate and bicarbonate, and from the bag of rice; also from a portion of the mill used to mix the ingredients; also from a large scoop used to carry the flour to the mixer. Considerable amounts of an antimony salt were obtained from the small scoop, and from the rim of the wheel of the mixer, also from the dust on the floor round the chute on the floor below, but none was obtained from the large scoop. These findings exonerate the flour, and show that the antimony had passed through the mixer, and was, therefore, not added in filling the bags.

“Almost exactly the same amount of mineral matter (about 2·5 per cent.) of the flour was found in the poisonous and non-poisonous flour.” The inference would be that the tartar emetic had been accidentally substituted (by weight) for one of the mineral ingredients. Professor Delépine concludes that this ingredient was acid phosphate on these grounds—“the fairly uniform distribution of the poison in the first series of samples, the absence of antimony from the plain flour, the fact that the amount of mineral matter was approximately the same in the non-poisonous as in the poisonous flour, the reduction in the amount of acid phosphate in the flour containing antimony (a reduction which corresponded closely to the amount of tartar emetic found in the self-raising flour), led me to the conclusion that tartar emetic had been substituted for a material part (nearly 30 per cent.) of the acid phosphate.”

The analysis showing this last statement would be of great interest. It would not, however, show conclusively by itself where the substitution occurred. Apparently, we are to infer this from the uniformity of tartar emetic in the poisonous self-raising flour, which is, perhaps, the strongest argument given for the conclusion which he reaches. It is, however, only a strong argument if the mixer at A is not capable of ensuring a fair uniformity of distribution.

Whatever may have been the point at which the tartar emetic was introduced, it would appear that the same occurrence took place, though to a much less extent, about November 13th.

Finally, it may be observed that samples were taken in connection with the works (D) by the County Medical Officer concerned. No evidence was obtained that tartrate of antimony had been added to the acid phosphate. But this examination took place late in the enquiry. In all the circumstances, perhaps evidence of the origin of the tartrate of antimony was hardly to be expected, since the manufacturers (D) were placed on the alert at the very beginning of

the enquiry, at which time alone samples might have usefully been taken, though even then it was not possible to prevent a timely warning from being given, and, moreover, the mischief, if any, was nearly three weeks old at that time. In conclusion, no definite evidence was obtained as to where the tartar emetic was added—whether at the flour mill, or in the manufacture of acid phosphate, though that may be matter of opinion. Most of the gentlemen concerned in the enquiry seemed disposed to suspect the latter source. But the facts so far presented hardly appear to warrant this conclusion, unless Professor Delépine's unpublished analyses more closely support his statement that the amount of tartar emetic present in the poisonous self-raising flour corresponds to the defect in the amount of acid phosphate. Even then such a correspondence might be consistent with accidental introduction of tartar emetic at the flour mill. Needless to say, this enquiry took much time and energy, though the result was not conclusive, or at least did not appear to the Medical Officer of Health to be so. Great credit is due to Mr. Higginbotham for the intelligence shown in his enquiries, and for the character of his reports. The various side enquiries which do not affect the main argument are omitted in the above statement, although they cast an interesting light on the possibilities of an accident occurring.

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## REPORT ON THE WORK OF THE MIDWIVES DEPARTMENT FOR THE YEAR 1918.

BY DR. M. A. C. DOUGLAS DRUMMOND.

The number of midwives who gave notice of their intention to practice in Manchester during 1918 was 134; of these, 29 reside without the City. In the course of the year two midwives died, and two removed from the area.

From returns made by the midwives, 6,667 births were attended by them. The total registered births in the City numbered 12,911. It will be seen from these figures that about 52 per cent. were attended by midwives, as against 58 per cent. in 1917.

### INSPECTION OF MIDWIVES.

401 visits were paid, and on 174 occasions midwives were interviewed at the Public Health Office. In 7 instances the houses were found dirty, and 12 bags were unsatisfactory and incomplete. Six registers were found to be not entered up to date. In 1917 the corresponding figures were 392 visits, 170 interviews, 5 dirty houses, 12 unsatisfactory bags, and 8 incomplete registers.

### PUERPERAL INFECTION.

During the year 1918, against an average of 102 cases in the thirteen years 1905-17, 66 cases of puerperal infection were notified, of which 32 occurred after abortion or premature labour. Of the abortions, 16 were at the second or third months of gestation, 6 at the fourth month, 1 at the fifth, 3 at the sixth, 1 at the seventh, and 3 during the eighth month of pregnancy.

The total fatal cases numbered 13, of which 6 were premature labours, as against an average of 23 in the thirteen years 1905-17.

The attack-rate per 1,000 births was 5.11, against 4.21 in 1917, whilst the case fatality per cent. was 19.7, against 22.0 the average for the years 1905-1918.

The mortality from Puerperal Fever per 1,000 births was 0.93, against an average of 1.10 in the preceding 10 years.

The usual figures prepared for Table C are as follows :—

	Number of Cases attended by					
	Midwives		Doctors		Midwife and Doctor	
	Attacks	Deaths	Attacks	Deaths	Attacks	Deaths
1918	14	2	45	9	7	2

Out of 66 cases notified, 2 patients were nursed at home, and both recovered ; 57 cases were removed to Monsall Hospital and 48 recovered, the case mortality being 15.8. The remaining seven cases were treated in other institutions, and three recovered.

Subsequent visits have been paid to the 53 women who recovered, and, with the exception of eight, all were in good health.

The particulars as to the character of the labour and the results for 1918 are :—

	No. of Cases	Recovery	Death
Normal full term labour . . . . .	23	20	3
Abnormal full term labour . . . . .	11	7	4
Abortion or Premature . . . . .	32	26	6

#### SUSPENSION OF MIDWIVES.

Eighty-four suspensions of midwives from their work occurred, chiefly on account of their having been in attendance on cases of puerperal infection or other septic conditions.

#### RECORDS OF CALLING IN MEDICAL AID.

During the year 1918 the number of medical records received was 2,075, as compared with 1,824 in the previous year. The numbers under the various reasons given for having advised medical aid correspond to those in previous years (see table herewith).

NUMBER OF CASES OCCURRING IN 1918 IN WHICH THE MIDWIFE ADVISED THAT A REGISTERED MEDICAL PRACTITIONER SHOULD BE SENT FOR (RULE E 19). ALSO THE NUMBER OF APPLICATIONS FROM MEDICAL PRACTITIONERS FOR PAYMENT OF THEIR FEES FOR ATTENDING CERTAIN EMERGENCY CASES.

Period	Medical aid called in on account of the following causes, as stated by the Midwife	Total	*Application for Fees		
Pregnancy	Abortions, miscarriages .....	16	2		
	Deformed pelvis .....	13	..		
	Loss of blood .....	11	..		
	Other unusual features of pregnancy .....	88	..		
Labour	Presentations {	Head—Malpositions .....	9	6	
		Breech {	In primiparæ .....	7	..
		In multiparæ .....	5	..	
		Para not stated .....	15	6	
		Transverse .....	9	5	
		Funis .....	16	5	
		Unable to make out .....	24	..	
		Foot .....	7	2	
		Hand .....	7	3	
		Tedious labour {	Forceps used .....	10	53
			No record as to forceps .....	196	9
	Placenta..... {	Retained .....	21	1	
		Adherent .....	20	8	
	Membranes retained .....	19	7		
	Rupture of perineum .....	471	132		
	Hæmorrhage.. {	Ante partum .....	33	6	
		Post partum .....	21	5	
		Hæmorrhage—3rd stage .....	3	..	
	Convulsions .....	5	3		
	Complications .....	15	5		
	Premature labour .....	18	..		
Lying-in	Abdominal swellings .....	2	..		
	Foul-smelling discharges .....	16	1		
	Secondary post-partum hæmorrhage .....	3	..		
	Rigor .....	2	..		
	Rise of temperature above 100·4° F. ....	67	4		
	Unusual swelling of breasts .....	11	..		
Progress unsatisfactory or complications .....	115	1			
Newly-born Child	Injuries received during birth .....	3	..		
	Obvious malformations .....	38	2		
	Tongue-tied .....	13	1		
	Feebleness of Child .....	129	5		
	Inflammation of eyes and eyelids .....	437	16		
	Skin eruption .....	56	2		
	Illness from prematurity .....	55	9		
	Malignant jaundice .....	18	..		
	Inflammation about the umbilicus .....	23	..		
	Unspecified or complications .....	15	..		
Convulsions .....	13	2			
TOTALS .....		2,075	301		

\* These applications have been classified according to the conditions requiring treatment found by the medical practitioner.

## PAYMENT OF FEES.

Arising out of the summoning of medical aid, 301 applications were received from medical practitioners for payment of their fees. After careful investigation the Committee decided to pay in 238 cases sums amounting to £225 3s. od. The amount paid in 1917 was £212. Fifty-nine of the 63 rejected applications were owing to the income being above the scale. The scale of incomes in use during the year was as follows:—

Man and wife,	35s. per week ;
„	and 1 child, 37s. per week ;
„	and 2 children, 39s. per week ; and advancing 2s. per extra child.

Nine applications for fees were received from midwives for attendance on the confinements of the wives and widows of soldiers and sailors, and of other women in need of assistance, as a result of the War. These fees were paid, the total amount being £5 17s. 6d.

## STILL-BIRTHS.

The total number of still-births reported to the Office during the year was 448, as against 493 in the previous year. Out of the 448 still-births, 237 occurred in the practice of doctors (these are ascertained from the Cemeteries' returns) and 211 in the practice of midwives. The percentage of still-born children is 3·4 ; in 1917 it was 3·7.

The summary of causes to which it seemed reasonable to credit the still-births shows the principal numbers to be:—

Definite history of ill-health of the mother	.. .. .	48
Accident to the mother before confinement	.. .. .	32
Shock	.. .. .	13
Breech presentations, premature	.. .. .	10
Worry	.. .. .	10

The still-birth rate was highest in St. George's, West Gorton, Newton, and Openshaw.

## DEATHS OF NEW-BORN CHILDREN.

Notifications of 19 deaths of new-born children before a medical practitioner could be obtained were received and investigated. In 14 instances inquests were held. In 3 cases "Want of attention at birth" was the verdict, and in 5 "Accidental suffocation."

## DEATH OF THE MOTHER.

No cases of death of the mother before a medical practitioner could be obtained were notified during the year.

## CHARGES OF MALPRACTICE, NEGLIGENCE, OR MISCONDUCT.

The Midwives Supervising Committee did not find it necessary to make any reports under this heading to the Central Midwives Board.

### WORK OF THE SPECIAL NURSES.

The work done by the two Nurses during the year 1918 has been tabulated, and is as follows:—

Still-births investigated .. .. .	206
Deaths of newly-born infants investigated .. .. .	22
Cases of Puerperal Fever nursed at home .. .. .	20
Nursing visits paid to 20 cases and to patients with raised temperatures .. .. .	347
Old Puerperal Fever cases investigated to ascertain subsequent histories .. .. .	91
New Puerperal Fever cases investigated to ascertain histories.. ..	65
Nursing visits paid to cases of Mammary Abscess .. .. .	45
"    "    "    "    Phlebitis .. .. .	50
"    "    "    "    Septic Skin Affections in Mothers ..	12
"    "    "    "    Houses Infected with Measles ..	8
"    "    "    "    "    "    "    Scarlet Fever	12
Number of cases of Skin affection in newly-born infants .. ..	43
Nursing visits paid to these 43 infants .. .. .	576
Number of nursing visits paid to 44 cases of Spina Bifida .. ..	14
"    "    "    "    44 cases of Septic Umbilicus ..	317
Special investigation visits concerning medical records, including visits paid to doctors .. .. .	147
Nursing visits paid for midwives during suspension and when unable to obtain a qualified substitute .. .. .	36
Visits to cases of Ophthalmia Neonatorum (assistance rendered to Ophthalmic Nurse) .. .. .	6
	2,017

### STATEMENT OF WORK DONE BY THE HEALTH VISITORS.

BY MISS SEED.

During the year 1918 the Infant Life Preservation Sub-Committee met ten times.

The staff at the end of the year consisted of the Superintendent, the Assistant Superintendent, five Female Clerks, a Cleansing Nurse, and 42 Health Visitors, 37 of whom were fully-certificated Nurses, and received salaries ranging from 30s. to 45s. a week, the remaining five having been taken over from the Ladies' Public Health Society by the Corporation in 1908, their

salaries varying from 25s. to 31s. 6d. a week. Fourteen of the Health Visitors resigned, and twenty-two new appointments were made. There was also one resignation and one new appointment on the clerical staff.

The work carried out by the Health Visitors has continued on the lines followed in 1917. Epidemics of Whooping Cough and Measles somewhat disturbed the regularity of the routine work during the earlier half of the year.

In November and December the investigations made in connection with the Influenza epidemic by the Health Visitors again caused a gap in the infant visiting.

Each year (until the end of 1920) also adds considerably to the work required from the staff. From 1916 we continued our observations of young children beyond their first year, so that during 1918 we were responsible not only for the children born during that year, but also for those born during the two preceding ones. This increase in the work is being met, to a certain extent, by the appointment of additional Health Visitors, and the consequent subdivision of existing districts into smaller areas. A few of the districts appear to be still too large for adequate work to be done therein, but the intrusion of other duties into the infant work renders it somewhat difficult to exactly estimate this point.

The home addresses of school children treated at the Cleansing Station in Oldham Road for Scabies commenced to come in to us from the Education Authorities since the month of March, 1918, and the inspection of the homes of these cases has now become one of the Health Visitor's duties.

Table 1 shows the work done throughout the year in each district worked by the Health Visitors.

Table 2 compares the work of 1918 with that done in the two preceding years.

*Notification of Births Act.*—A great similarity occurs in the figures relating to the notification and registration of births for 1918, and in those for the previous year. The total number of notifications received under the Notification of Births Act was 11,871, of which 3,279 were made by doctors, 8,309 by midwives, and 283 by the parents. Out of the total of 11,871, those occurring in the districts covered by the Health Visitors numbered 7,334. The registered births within the City numbered 12,911, and 8,778 were referred to the Health Visitors.

In addition to these, the Health Visitors discovered on their districts 98 other infants under the age of one year. These are principally removals into Manchester from other towns. Perhaps it would not be inappropriate to



mention at this point that whenever one of our infants removes from Manchester every care is taken to ascertain the new address of that infant, and it is then forwarded to the Medical Officer of Health for the district. We also receive many such communications from other towns, but it is to be regretted that the custom is not more generally observed.

*Deaths.*—1,037 deaths of infants under one year of age occurred in the districts covered by the Health Visitors during 1918. Of these, 97 lived less than a day, 124 died within a week, 152 died within a month, 156 died under three months old, 155 under six months, and 178 under nine months; the remaining 175 died between the ages of nine months and one year.

In 339 cases death was due to Bronchitis and Pneumonia, in 203 cases to Prematurity, in 76 cases to Enteritis, in 97 cases to Debility and Marasmus, in 52 cases to Convulsions, in 27 cases to Accidental Deaths, including those due to want of attention at birth; 26 cases died from Tuberculosis, and 21 from Syphilis, and the remaining 196 deaths were due to various other causes.

Table 3 shows the distribution of deaths according to districts.

*Summer Diarrhœa.*—From July 15th to September 30th, 1918, 313 cases of Diarrhœa were visited. Of these, 51 occurred during the last two weeks in July, 179 during the month of August, and 83 during the month of September. These figures are greatly below those quoted for 1917, when 636 cases were visited.

In Ancoats 42 cases were visited, 16 in London Road and Deansgate, 28 in St. George's (including Monsall district), 32 in Ardwick, 77 in Hulme, 11 in Beswick, 7 in Bradford, 5 in West Gorton, 29 in Gorton, 19 in Openshaw, 10 in Miles Platting, 12 in Newton Heath, and 1 each in Blackley and in District I.

175 of the total cases were children under 12 months, and of these 43 were having breast-feeding, 31 mixed feeding, and 101 entirely artificial feeding at the onset of the illness.

42 cases died, though not all of the deaths were ascribed to Diarrhœa. 28 deaths were those of children under one year of age.

*Child Welfare Centres and the Babies' Hospital.*—Though taking no part in the actual working of the Child Welfare Centres, the Health Visitor must be regarded as the chief source of supply for cases for the centres, and a decrease in the number of new attendances is to be observed when, for some reason or other, the Health Visitors are diverted from the infant visiting. The fortnightly attendances of the Health Visitors at the consultations still continues, and occasionally a Health Visitor accompanies a mother to the centre at other times—this being an effectual way of persuading careless mothers to bring their children under medical supervision. Lectures to the

Health Visitors by the Medical Officers of the centres are given weekly, and all infant reports unsatisfactory from a medical point of view are brought to their notice for advice.

All cases for the eighteen "Corporation" beds in the Manchester Babies' Hospital are admitted through the centres. There are more applications than can readily be dealt with, and frequently the waiting list has been a very long one.

During 1918, 106 applications were received for admission to the Babies' Hospital. Of these, 12 were for various reasons cancelled, 2 were admitted to other hospitals, 1 was a Salford case, and the application was sent in in error, 3 died previous to admission, in 1 permission was refused by the parents, and 5 improved whilst waiting for a bed.

Of the 94 cases who were admitted to the Hospital,

CENTRE			
18	cases	were	sent in from Rosamond Street, Chorlton-upon-Medlock.
9	"	"	Lower Moss Lane, Hulme.
13	"	"	Hyde Road, Gorton.
9	"	"	Higher Ardwick, Ardwick.
12	"	"	Willert Street, Collyhurst.
13	"	"	Mill Street, Ancoats.
18	"	"	Manipur Street, Openshaw.
2	"	"	153, Cheetham Hill Road, Cheetham.
<hr/>			
94	Total.		

The various conditions from which the children were notified to be suffering were :—

	Cases
Malnutrition .. .. .	25
Atrophy .. .. .	19
Dyspepsia .. .. .	18
Debility .. .. .	1
Prematurity .. .. .	1
Marasmus .. .. .	4
Bronchitis .. .. .	2
Gastritis .. .. .	3
Gastro-Enteritis .. .. .	6
Diarrhœa and Vomiting .. ..	8
Enteritis .. .. .	4
Vomiting .. .. .	3
<hr/>	
Total .. .. .	94

The ages of the infants on admission were :—

Under 1 month	..	2 cases.
Aged 1 "	..	9 "
" 2 months	..	12 "
" 3 "	..	10 "
" 4 "	..	15 "
" 5 "	..	12 "
" 6 "	..	7 "
" 7 "	..	7 "
" 8 "	..	8 "
" 9 "	..	3 "
" 10 "	..	1 "
" 11 "	..	5 "
" 12 "	..	3 "

The length of stay in hospital varied, as follows :—

7	remained in hospital for one week.
15	" " rather less than one month.
23	" " for one month.
24	" " " two months.
7	" " " three months.
8	" " " four months.
3	" " " five months.
3	" " " six months.
3	" " " seven months.
1	" " " eight months.

Eighteen of the cases died in hospital, and seven have died since discharge. Very few of the mothers attend the centres as regularly as they should after receiving the infants home again from hospital. The necessity for this is shown by the fact that at the last visit paid by the Health Visitor to the Babies' Hospital cases, 30 were said to be in a satisfactory condition, and 25 were unsatisfactory. 6 cases were inmates of other hospitals or homes, and the remaining eight cases being sent in from districts unworked by the Health Visitors have not been followed up.

*Monsall Hospital Infant Ward.*—Cases sent into the Special-Infant-Ward in Monsall Hospital are kept in for longer periods than those in the Babies' Hospital. Consequently, the number of cases admitted here is much lower, a fact also determined by the smaller number of beds at our disposal, namely, ten. Fourteen applications were received and fourteen children were admitted during the year.

## CENTRE

5 cases were sent in from	Rosamond Street, Chorlton-upon-Medlock.
3 " " "	Hyde Road, Gorton.
3 " " "	Mill Street, Ancoats.
2 " " "	Willert Street, Collyhurst.
1 case was sent	153, Cheetham Hill Road, Cheetham.

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14 Total.

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All the children ranged between the ages of one and two years. Six children were suffering from Malnutrition, seven from Rickets, and one from Chronic Enteritis.

2 children were detained in hospital for	1 month.
2 " " "	4 months.
2 " " "	5 "
2 " " "	6 "
1 child was	7 "
*1 " " "	8 "
1 " " "	10 "
1 " " "	11 "
*2 children were	12 "

\* These three children are still in hospital.

Only one child died in hospital, and none have died since discharge.

Five of the cases when last re-visited were in a satisfactory condition, two were unsatisfactory, one child had left Manchester, and the other two came from unworked districts and have not been followed up.

*Measles, German Measles, and Whooping Cough.*—8,448 cases of Measles, 675 of German Measles, and 5,730 of Whooping Cough have been visited, and kept under supervision until satisfactory. The distribution of these diseases throughout the City and the mortality therefrom are to be found elsewhere in this annual report.

The grant of £200 allowed during 1917 in connection with Measles, German Measles, and Whooping Cough has been continued throughout 1918, and again proved a very great boon in providing milk for infected children up to five years of age in households where the family income fell below the standard scale.

Throughout the year 823 applications for milk were granted, and 10,502 pints of milk were given.

The gift of coal, now almost entirely used up, was also of great benefit in many of these cases, and was also a considerable standby during the Influenza epidemic of November and December. 970 applications for coal were sanctioned and tickets issued to the extent of 1,732 cwt. of coal. 143 of these applications, representing 245 cwt. of coal, were granted in respect of Influenza.

As in 1917, however, on collecting the tickets from the various Highways Department yards, where the coal has been stored, only 910 tickets were found to have been used, so that instead of 1,732 only 1,651 cwt. of coal had been distributed.

Amount of coal received December, 1916 .. .. .	Tons.	250
Amount of coal distributed during 1917 ..	Tons.	123
Amount of coal distributed during 1918 ..	82½	} 205½
Amount of coal in hand for 1919 .. .. .		

As in the preceding year, we have endeavoured to use these grants of milk and coal as a means towards the better nursing of young patients at home, and have insisted upon the necessary instructions given by the Health Visitors being carried out, as far as means would permit, before granting the application for relief.

*Verminous Work.*—There is, again, a marked increase in the number of notifications with regard to verminous cases and cases of Scabies, but the work at the Cleansing Station has decreased considerably, being little more than half the amount carried out during the preceding year. This may be due to the fact that the Cleansing Station is in constant demand for the treatment of Scabies cases by the Education Authorities.

The notifications received from the Education Authorities in respect of verminous cases numbered 909, and 185 as regards Scabies. 18 cases of Scabies were found by the Health Visitors. The Cleansing Station was in use on 17½ days at the request of the Education Authorities, and on 3 other days for the purpose of cleansing 16 cases whose verminous condition was beyond the cleansing by home methods. Altogether, 130 children were cleansed. This work is still carried out by the Special Nurse appointed by the Infant Life Preservation Sub-Committee.

Of the 130 children brought to the Station, 10 had body vermin only, 31 had head vermin, and 90 were suffering from both body and head vermin; 5 children were suffering from Impetigo, and 2 others from Discharging Ears, etc. Legal proceedings were taken against the parents on account of the persistent verminous condition of their children in 19 instances, and 3 fines of 10s. each, 1 of 7s. 6d., 12 of 5s. each, and 3 of 2s. 6d. each were imposed. The Cleansing Nurse was required to give evidence in each case.

Some cases of neglect, both verminous and from other sections of the work, were reported to the N.S.P.C.C. 21 such cases were referred throughout the year, and visits from the Society's Officers have been helpful, even without resorting to a prosecution.

We are again indebted to the Lord Mayor, through whose kindness we received a supply of Charity Forms, which enabled us to recommend a number of necessitous cases for gifts of sheets, blankets, or flannel. We also received a very large number of flannel garments for infants, and for these our best thanks are due to Councillor Miss Ashton, who kindly arranged for their being made. These garments are distributed by the Health Visitors as occasion arises.

A summary of the work done by the Health Visitors under the supervision of the Ladies' Society for visiting the Jewish poor, and of the Medical Officer of Health, is given in the following tables:—

*Work of the Jewish Health Visitors during the year 1918.*

DISTRICT	HOUSE-TO-HOUSE INSPECTIONS								RE-INSPECTIONS			INFANTS
	Number of Visits	Overcrowdings	Disrepair	Dirty	Cellars Dirty or Dilapidated	Yards Defective	W.C.'s Defective	Referred to Sanitary Dept.	Number	Defects Remedied	New Complaints Referred	
Red Bank . .	457	4	139	33	176	49	54	34	587	185	125	794
Strangeways . .	467	..	161	1	4	26	29	84	195	130	48	514
TOTAL . .	924	4	300	34	180	75	83	118	782	315	173	1308

*Limewashing.*

DISTRICT	Bed-rooms	Kitchens	Yards	W.C.'s	Cellars	Coal Places	Ceilings	Stair-cases	Sculleries
Red Bank . .	11	3	100	86	8	1	10	15	40
Strangeways .	24	1	96	96	2	..	1	4	49
TOTAL . .	35	4	196	182	10	1	11	19	89

On the resignation of one of the Jewish Health Visitors in August, 1918, and the death of the other, which took place in October, the above Society filled the vacancies so created by two trained nurses, who receive the same remuneration as the Corporation Health Visitors, with the exception of uniform.

TABLE 1.—HEALTH VISITORS' WORK, 1918—DETAILED STATEMENT.

DISTRICTS	INFANT WORK											LIMEWASHING										SCABIES		VERMINOUS WORK		MEASLES WORK				WHOOPIING COUGH		MISCELLANEOUS					TOTAL NO. OF VISITS					
	No. of Births referred to Health Visitors	Primary Visits	Subsequent Visits	Children over 12 months	Children over 2 years	Neglected Children		Investigation of Diarrhoea	No. of Cases Found	No. of Expectant Mothers Advised	Cases Reported to N.S.P.C.C.	Sanitary defects found during other work			Visits	Bedrooms	Kitchens	Yards	Closets	Cellars	Coal Places	Ceiling	Staircases	Others	No. of Lime-wash Tickets Given	Primary Visits	Subsequent Visits	Measles		German Measles		Primary Visits	Subsequent Visits	Sick Children	Visits re Relief	Visits re Inquests		Visits "Out"	Influenza Visits			
						P.	S.					Found	Remedied	Visits														Primary Visits	Subsequent Visits	Primary Visits	Subsequent Visits											
Ancoats—West ...	145	140	1,628	821	51	...	3	3	9	...	...	14	29	26	226	110	82	95	99	10	20	14	58	10	82	1	2	261	103	339	10	3	96	319	55	3	...	803	12	4,917		
" North ...	221	225	1,642	1,002	243	...	...	5	3	...	...	35	37	96	250	95	80	82	82	18	53	11	11	...	91	1	35	33	74	192	7	1	85	167	27	15	2	827	70	5,089		
" Central ...	137	137	1,141	1,251	215	1	20	11	25	...	...	18	32	21	69	13	20	28	24	7	10	27	3	...	31	...	19	77	30	91	11	17	75	382	157	16	1	740	64	4,546		
" South ...	101	101	1,775	700	141	...	...	...	49	4	...	26	38	66	193	74	80	87	88	17	48	100	37	...	68	5	21	119	61	137	2	13	64	269	16	29	5	220	97	4,128		
" East ...	143	135	1,225	855	193	...	...	1	4	5	1	97	71	143	230	40	52	81	80	7	9	107	6	...	45	...	33	85	36	79	13	39	138	659	46	12	...	62	42	4,027		
London Road ...	147	105	929	1,048	1,108	...	...	1	17	2	...	14	4	3	...	...	...	1	...	...	...	...	...	16	...	...	18	90	96	157	4	10	140	495	34	26	3	260	102	4,809		
St. George's—North ...	225	220	683	580	388	...	...	6	...	...	...	13	6	6	26	18	4	5	6	2	...	2	8	4	8	1	3	22	12	128	263	12	16	98	394	16	...	1	495	46	3,335	
" East ...	235	271	944	925	546	2	1	5	14	20	...	63	87	61	127	35	70	74	9	4	...	8	3	...	90	2	1	23	113	99	239	20	6	137	252	13	18	2	410	149	4,366	
" Central ...	337	311	1,224	962	185	...	...	2	21	21	...	72	34	139	15	4	7	7	1	...	...	...	...	8	2	3	22	53	223	278	21	30	230	426	12	5	3	933	77	5,156		
C.-on-M.—North ...	309	207	1,540	1,273	51	...	2	15	2	9	1	46	31	26	2	...	...	...	...	...	...	...	...	16	1	4	49	85	88	215	19	...	84	159	124	44	6	862	69	5,015		
" East ...	262	444	2,110	791	260	1	8	1	...	...	...	8	11	15	2	1	1	...	...	...	...	...	...	...	3	...	36	77	34	31	7	...	34	46	34	8	2	489	97	4,533		
" South ...	263	82	376	280	160	...	...	...	...	...	...	9	5	4	...	...	...	...	...	...	...	...	...	...	1	12	7	23	2	6	...	...	...	3	...	...	...	212	67	*1,235		
Hulme—North ...	155	79	612	325	182	...	...	...	6	...	...	15	8	3	1	...	...	...	...	...	...	...	...	20	...	...	36	49	183	609	7	16	23	311	17	...	...	361	42	†2,857		
" East ...	235	229	1,516	1,378	34	1	1	2	...	...	...	4	51	19	36	4	7	15	15	12	5	2	1	...	32	3	2	29	77	96	251	9	1	111	302	32	46	2	541	26	4,744	
" West ...	265	207	1,203	900	457	...	...	...	5	9	...	81	86	127	17	3	2	5	2	1	...	3	1	...	20	4	3	40	96	123	175	4	...	269	636	6	12	3	1,005	58	5,435	
" South East ...	282	360	1,529	1,259	373	2	3	6	27	17	...	3	6	1	21	1	3	3	2	...	...	...	...	20	3	3	28	45	69	105	1	...	117	175	21	17	1	738	31	4,914		
" South ...	201	123	907	506	207	...	...	2	19	21	...	5	1	11	1	...	...	...	...	...	...	...	...	6	2	2	19	30	18	24	...	4	...	2	5	...	2	527	26	‡2,598		
" Central ...	238	255	1,307	715	175	...	...	...	32	22	...	38	19	92	80	2	1	17	6	3	...	1	1	...	43	3	13	27	109	83	252	10	...	187	584	9	43	5	313	68	4,360	
Ardwick—North ...	180	185	1,313	632	328	...	3	3	18	18	2	...	38	46	28	...	...	1	...	...	...	...	...	33	...	1	18	80	102	203	29	2	216	361	244	33	8	71	81	3,987		
" South ...	177	170	1,488	872	184	1	9	1	18	21	1	43	30	26	15	1	1	7	5	...	8	...	...	9	1	3	31	110	146	355	7	24	84	387	124	79	3	306	70	4,496		
" East ...	320	317	2,236	971	325	1	4	2	16	22	1	12	16	24	4	...	...	...	...	...	...	...	...	1	2	3	17	65	68	92	13	12	146	218	44	4	3	639	80	5,291		
Openshaw ...	204	208	883	737	143	...	...	2	7	12	...	12	22	31	38	2	3	4	3	1	...	...	...	4	...	...	5	20	168	237	14	21	258	459	226	17	...	394	87	3,948		
Longsight ...	303	296	1,120	654	219	...	15	...	8	26	...	15	25	17	4	...	1	1	1	...	...	...	6	...	...	32	136	117	234	11	10	85	279	27	6	2	430	47	3,747			
West Gorton ...	309	291	995	690	119	2	13	1	...	...	1	49	3	4	2	2	2	5	4	...	...	...	10	...	...	16	92	158	471	5	3	100	231	78	28	...	793	36	4,938			
Gorton ...	200	342	1,627	993	326	...	3	1	1	23	4	28	47	90	148	22	33	40	45	4	3	14	3	3	62	...	2	20	37	85	170	10	9	71	121	12	55	3	771	45	4,941	
" South ...	207	191	1,942	446	22	2	15	1	...	...	...	18	7	8	...	...	...	...	...	...	...	...	...	...	1	4	13	20	169	595	3	17	30	48	3	5	...	196	114	§2,945		
" East ...	254	350	1,566	811	195	...	2	...	5	...	...	54	33	12	3	...	2	...	1	...	...	...	1	1	...	1	3	13	61	380	711	18	17	114	252	22	1	...	975	47	5,551	
Beswick ...	235	200	1,025	1,200	44	...	2	...	20	18	...	56	35	25	101	25	19	49	44	...	6	37	11	8	70	...	...	19	78	195	259	6	...	134	311	14	69	4	1,042	56	4,850	
Newton East ...	210	379	1,276	795	21	...	...	...	5	10	1	9	2	1	4	...	...	...	...	...	...	...	...	1	1	...	40	97	243	474	4	...	97	72	2	127	...	18	39	3,600		
Newton ...	200	122	647	461	328	...	...	...	12	5	...	24	5	3	...	...	...	...	...	...	...	...	...	5	9	11	22	6	128	187	18	14	74	204	4	14	1	307	53	†2,613		
Miles Platting ...	249	299	1,115	866	36	...	1	6	...	...	...	18	32	37	12	4	3	3	2	...	...	...	8	1	5	6	...	...	66	82	63	193	18	21	98	395	4	16	2	378	40	3,748
Monsall ...	278	287	1,406	1,249	401	...	3	4	8	8	...	33	15	70	31	16	2	6	13	...	...	30	...	...	12	1	4	19	63	178	205	17	6	195	378	151	18	7	387	70	5,156	
Bradford ...	252	272	1,178	825	1	...	8	...	23	7	1	130	24	27	65	25	17	16	15	...	1	2	7	...	19	4	...	12	50	152	253	16	17	202	563	92	26	18	320	8	4,109	
Harpurhey ...	275	354	1,928	395	209	...	...	1	...	8	...	21	11	15	8	1	1	...	...	...	...	...	...	2	3	3	10	12	196	482	20	32	240	643	3	79	1	694	54	4,473		
Blackley ...	203	183	511	...	...	...	...	...	11	15	...	9	41	...	...	...	...	...	...	...	...	...	...	...	...	...	20	51	398	541	3	2	227	390	33	14	5	354	45	2,777		
District I. ...	236	161	2,091	139	...	...	...	...	19	24	...	64	49	111	14	...	...	...	...	...	...	...	...	5	2	2	30	56	379	457												





TABLE 2.—SHOWING THE WORK DONE BY THE HEALTH VISITORS DURING THE YEAR 1918 AND COMPARING IT WITH THE WORK DONE IN 1916 AND 1917.

Classification of Visits	Number of Visits Paid in 1916	Number of Visits Paid in 1917	Number of Visits Paid in 1918
Primary visits to Infants .. ..	10,091	9,027	9,078
Subsequent visits to Infants.. ..	61,113	57,132	48,543
Subsequent visits to Children over 1 year of age and under 5 years	9,265	22,036	36,540
Other visits <i>re</i> Infants and Young Children	1,184	1,243	2,203
House to House Inspections .. ..	968	....	....
Re-inspections .. .. .	1,445	....	....
Special visits <i>re</i> Sanitary Defects..	551	1,541	1,574
Visits <i>re</i> Limewashing .. .. .	2,195	1,977	1,783
Primary visits to Verminous Cases (including Scabies)	145	709	966
Subsequent visits to Verminous Cases	1,038	2,233	2,771
Measles Investigations .. .. .	9,244	10,818	8,026
Subsequent visits .. .. .	19,032	23,295	15,516
German Measles Investigations ..	1,168	650	532
Subsequent visits .. .. .	1,678	591	665
Whooping Cough Investigations ..	....	536	5,714
Subsequent visits .. .. .	....	705	14,002
Visits <i>re</i> Relief .. .. .	....	1,069	1,020
Special Investigations (Influenza 1918)	....	149	2,252
Visits " Out " .. .. .	....	16,844	20,420
<b>Total visits .. .. .</b>	<b>119,117</b>	<b>150,555</b>	<b>171,605</b>
Number of Health Visitors at end of the year	36 (only 35 working, one ill)	36	Average for year 40 (4 Health Visitors doing Measles and Whooping Cough work)
Number of Districts worked .. ..	32 (one not worked owing to illness of Health Visitor)	32 (Blackley not worked owing to pressure of other work)	38

TABLE 3.

DISTRICT	Number of Health Visitors working in the District	Number of Deaths	CAUSES OF DEATH—1918							
			Bronchitis and Pneumonia	Prematurity	Debility and Marasmus	Enteritis	Convulsions	Tuberculosis	Syphilis	Accidental Deaths, including Want of Attention at Birth
Ancoats . . . . .	5	121	40	22	7	11	6	3	2	4
Central—London Road and Deansgate	2	42	16	9	4	3	2	2	1	..
St. George's, including Monsall	4	135	56	28	15	13	3	3	1	1
Chorlton-upon-Medlock..	3	119	30	19	15	12	6	6	5	3
Hulme . . . . .	5	152	43	26	11	18	12	2	2	5
Ardwick . . . . .	3	83	29	21	10	5	..	2	1	5
Openshaw . . . . .	1	16	5	5	..	..	1	..	..	..
West Gorton, including Longsight	2	84	25	23	2	1	7	2	2	4
Gorton . . . . .	3	65	19	8	5	3	3	2	2	1
Beswick . . . . .	1	29	12	6	6	1	1	..	..	1
Newton, including Miles Platting	3	64	14	12	13	6	4	1	..	2
Bradford . . . . .	1	35	14	5	5	2	..	2	2	..
Harpurhey . . . . .	1	37	12	13	1	..	3	..	1	..
Blackley.. . . . .	1	13	1	4	..	..	2	..	..	..
Special Districts . . . .	2	42	23	2	3	1	2	1	2	1
TOTAL.. . . . .	37	1037	339	203	97	76	52	26	21	27

## SCHEME FOR THE DISTRIBUTION OF MILK UNDER COST.

A brief outline of this scheme was given in the Annual Report for 1917. It will be recalled that the provision of milk under cost was taken over from the School for Mothers in November, 1917, their expenditure to be defrayed as from the beginning of November. Up to November, 1917, this provision was made by the School for Mothers, whose average expenditure per month was stated at £35. At the same time it should be mentioned that their representatives on the Infant Life Preservation Sub-Committee stated that the proposed estimate of £70 per month would not suffice. Nevertheless, this estimate was sent to the Finance Committee and to the Council. The actual expenditure, which had been and was being incurred, was to some extent concealed by the fact that milksellers' bills were not sent in for a considerable time after the liabilities had been incurred. Unfortunately, the administration was left to the School for Mothers without the liabilities to date being ascertained, and when these came to be got out in February and March they proved to be much greater than was anticipated, a great increase in expenditure having, in fact, occurred as from the beginning of November. These liabilities, it is admitted, ought to have been ascertained, nor should there have been any difficulty in this. It thus became necessary to apply to the Finance Committee and to the Council to sanction supplementary estimates of £350 and £450. Even so, had expenditure gone on at anything approaching the same rate, these estimates would have been exceeded, and the expedient was adopted of raising the price of milk, and allocating amongst the milk centres the sums left before the new estimates could come into operation in the proportions of the children attending.

An undertaking was given to the Finance Committee that adequate measures would, in future, be taken to secure the careful expenditure of any sums allocated for these purposes.

When the distribution of milk was taken over from the School for Mothers the arrangements existing were that the milk sold under cost (*viz.*, at 4d. per quart) should be sold only at the milk centres, on the prescription signed by the Medical Officer taking the centres, after careful enquiry by the Superintendent Nurses, no milk being sold until careful enquiry had been made through the Charity Organisation Society into the circumstances of those applying for assistance.

There is no reason, except in one instance, for believing that these conditions were not equally fulfilled after and before November 1st, 1917, or that the great increase in the sales of milk under cost was due to any cause other than a growing need, though it is evident that any laxity would lead to an increased sale of milk.

The Medical Officer of Health was instructed to draw up a report on the needs of the City in respect of milk under cost, and on the methods pursued for its distribution.

A report on the former subject was presented on March 14th, 1918, and on the latter on March 15th, 1918.

It appears unnecessary to reproduce these reports, though attention may be called to the fact that this scheme was now governed by the Milk (Mothers and Children) Order, 1918, dated the 18th February, 1918, made by the Food Controller under the Defence of the Realm Regulations, by an Order of the Local Government Board dated the 8th February, 1918, and by an accompanying circular issued by the Local Government Board dated 9th February, 1918. These Orders, in effect, impose it as a duty on the Local Authority to provide a scheme for the distribution of milk under cost. It also becomes their duty to provide milk for nursing mothers and young children who can defray the cost, and this may be effected by preferential Orders on dairymen made by the Food Controller, who has always given immediate attention to Medical prescriptions with this object.

It does appear necessary, however, to reproduce these reports in a summary form, which may be done by reprinting the report to the Council of the Finance Committee's report on the subject, since a number of enquiries have been made by other Authorities in regard to the methods pursued in Manchester.

The report here given was approved by the City Council and by the Local Government Board :—

REPORT OF THE FINANCE COMMITTEE, SUBMITTING THE SANITARY COMMITTEE'S  
ESTIMATE FOR THE PROVISION OF MILK TO CHILDREN UNDER FIVE YEARS  
OF AGE AND TO NURSING MOTHERS.

As required by Standing Order 69, the Finance Committee present to the Council the accompanying rate estimate of the Sanitary Committee.

On the 5th December, 1917, the Council approved a Special Estimate for £350 in respect of the supply of milk to nursing mothers and infants and young children at a cheap rate, and a Supplementary Estimate for £450 was approved on the 6th March, 1918.

In submitting the Special Estimate it was pointed out that the expenditure was eligible for aid under the Maternity and Child Welfare Scheme (*i.e.*, 50 per cent. of the approved expenditure is refunded by the Local Government Board), and that the Local Government Board hoped to introduce legislation empowering Local Authorities to supply milk to nursing mothers and infants and young children.

Orders have now been issued under the Defence of the Realm Regulations, and accordingly the Sanitary Committee have taken the matter into consideration, and presented an estimate for £10,500 in respect of the ensuing financial year. The Orders and Circular from the Local Government Board accompany the estimate from the Sanitary Committee.

The Finance Committee have had before them representatives from the Sanitary Committee, and they have explained that stricter steps will be taken to control the expenditure in the future than existed when the first estimate was presented. It appears that the assistance is only given where the income of a family is below a certain standard, and a copy of the standard will be found in Appendix 4. Owing to the increased cost of living due to the war this standard has had to be increased.

The estimate—which obviously can only be approximate owing to the absence of reliable data—has been framed on the assumption that 4 per cent. of the population under consideration will require assistance. It is also assumed that 4d. a quart will be paid by the consumer, and that the balance will be found by the Corporation, but in practice the scheme may be varied to meet the necessities of each case, and the above figures must be taken as averages.

It will be observed that the Sanitary Committee will revise the estimate if found necessary in the light of future requirements, and it should be pointed out that the scheme does not provide milk for expectant mothers, nor anything in respect of food.

As the grant from the Local Government Board is only received in the financial year following that in which the expenditure is incurred, the full estimate will fall as a charge upon the rates for 1918-19, less a credit for half the expenditure in respect of the year 1917-18.

It should be made clear by the Local Government Board that the grant will include half the cost of the expenses of administration.

On behalf of the Finance Committee,

H. J. GOLDSCHMIDT,  
*Chairman.*

4th April, 1918.

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REPORT OF THE SANITARY COMMITTEE,  
Dated March 21st, 1918.

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*Supply of Milk to Children under Five Years of Age and to  
Nursing Mothers.*

*Memorandum.*

The following are extracts from reports of the Medical Officer of Health submitted to the Infant Life Preservation Sub-Committee:—

The following Orders have recently been issued on this matter:—

*Ministry of Food.*

The Milk (Mothers and Children) Order, 1918, dated the 8th February, 1918, made by the Food Controller under the Defence of the Realm Regulations.

*Local Government Board.*

The Local Authorities (Food Control) Order (No. 1), 1918.

The Local Government Board have also issued an explanatory Circular dated 9th February, 1918.

(The Orders and Circular are attached. See Appendices 1, 2, and 3.)

The first-named Order enacts that a Local Authority may, and, when required by the Local Government Board, shall, arrange for the supply of food and milk for expectant mothers and nursing mothers, and of milk for children under five years of age, subject to such conditions as may from time to time be prescribed by the Food Controller.

The Order of the Local Government Board goes far to make the former Order obligatory on Local Authorities.

The quantities are not to exceed the amounts certified to be necessary by the Medical Officer of Health or the Medical Officer of a Maternity or Child Welfare Centre, or by a person authorised in that behalf by either of such Medical Officers or by some other person appointed by the Local Authority for this purpose. This milk may be supplied at current prices, or at a lower price or without charge, according to the circumstances of the family. The standard is to be determined by each Authority. Milk includes "dried" milk.

The Local Authority may defray the expenses incurred by a voluntary body in the sale of milk prescribed.

The Local Government Board undertake to defray half the cost of milk to a Local Authority under an approved scheme.

It is evident that it will be difficult to limit the provision of milk under these Orders; but it is also clear that the Local Government Board only undertake to defray half the cost when the amount expended is according to an estimate approved by them. The scheme, therefore, will provide efficient control.

The only machinery suitable and adequate for this purpose at the present time is to be found at the Child Welfare Centres, and the provision for nursing and expectant mothers should, therefore, be considered in connection with their estimate for the coming year.

As the children are seen at the Centre, the Medical Officer prescribes the amount of milk which the child requires. The case is then referred to the C.O.S., where the particulars are entered on the enquiry form by the Enquiry Officer. After that these particulars are compared with the Mutual Registration Register, and allowance is made in the ascertained income for help obtained from other quarters. The enquiry form is then sent to the Medical Officer of Health, and a standard income is calculated out on the method shown in Appendix 4, and entered on the form. These enquiry forms are then forwarded to the Infant Welfare Centres, and if the enquiry shows that the actual is below the standard income, milk is sold to the mother by the School for Mothers on the medical prescription at reduced cost, that is to say, at 4d. instead of 7½d. a quart.

The mother buys, at reduced cost, a card showing the amount of milk to which she is entitled. A duplicate of this is kept, and towards the end of the week all these cards are sent by the Superintendent to the milk dealer concerned. On these, and on the duplicate produced by the customer, the dealer supplies the milk for one week. The milkman collects once a week the duplicates in possession of the customer, and returns to the School for Mothers those which had been sent from the Centre. These are used to check the bills subsequently sent in. This machinery has worked quite well.

The cases will be reinvestigated at least once in two months, so as to ascertain whether the circumstances of the family have changed, and will form the subject of frequent enquiry at the Centres.

By these means the expenditure can be held in check so far as can be foreseen.

*Estimate of the Assistance in Milk needed for Children under Five years of age and for Nursing Mothers during the year 1918-19.*

In a Circular bearing date February 9th, 1918, the Local Government Board trust that the Local Authority, if they have not already done so, will at once consider the needs of their district in respect of the provision of food for expectant and nursing mothers, and of milk for these mothers and for children under five years of age, both in regard to the ability of the women concerned to pay for the necessary food and milk and to the sufficiency of the supply of milk.

As regards the amount required, there are no reliable data. We may, however, take as the basis of a minimum estimate the figures showing the assistance in milk given to cases out of the £200 allowed by the Corporation to the Infant Welfare Department to be expended especially on cases of Measles. This sum has been carefully administered, and the proportion of families attacked with Measles in which assistance has been given has been 4 per cent. But from the enquiries of the Health Visitors into the circumstances of families in the poorer districts the proportion of families under a standard rate of living when the mothers are not working is very much higher than this, approaching one-half.

The Measles figure, however, has the advantage that it relates to all classes of the community, though the disease is liable to be prevalent more in the poorer than in the better class districts, while the other figure relates to small numbers in the poorer districts.

Taking the births at 15,000 per annum,  $\frac{4}{100}$  of this = 600, and allowing a quart to each of these mothers per day we get a daily expenditure of £8 15s. If the allowance is continued for four months this amounts to £1,065. But a twentieth may be deducted on account of deaths of the children to be nursed, which leaves £1,012.

If we assume that only 80 per cent. of the children will be nursed at the breast for four months a further fifth may be taken off, leaving £810 of an estimate. This, however, does not allow for sickness in the mother who loses her child early. No allowance is made for expectant mothers, and we may put the sum at £900.

The number of infants requiring milk below cost is approximately the same. Each is to receive on the average  $1\frac{1}{2}$  pints daily. Four-fifths, namely, those having milk from the breast, will require the above amount for only eight months. The remaining fifth will be assisted during the whole year. It will be found that this requires for infants a sum of £1,669.

The number of children of age 1 and under 2 at the Census was 15,326. Now, according to the Food Controller's Order, children up to 18 months may receive  $1\frac{1}{2}$  pints daily, while children over 18 months are not to get more than 1 pint. Hence 4 per cent. of one-half of 15,326 would get  $1\frac{1}{2}$  pints daily, and 4 per cent. of one-half would get 1 pint daily on the above basis. This requires for the second year £2,039.

The remaining number of children at the Census under five years of age was 47,130.

4 per cent. = 1885.2, giving the daily number of pints of milk required, equals 942.6 quarts, which at  $3\frac{1}{2}$ d. a quart involves an annual expenditure of £5,017.

On this basis the total amount required for the year would be:—

Nursing mothers ... ..	£
Infants under 1 year ... ..	900
Children of 1 year ... ..	1,669
Children 2—4 ... ..	2,039
	5,017
	<hr/>
	£9,625
	<hr/>

The basis of estimation undoubtedly shows less need than exists.

On the other hand, as for purposes of control, the expenditure must be at the Centres—not all necessitous children or mothers will be able to get there. Moreover, the estimate would be decreased by the steady decrease in the birth-rate.

Allowing for these factors, it will not be safe to put the estimate of requirements at less than £900 for nursing mothers, and £8,700 for children requiring additional nourishment.

It may be suggested that dried milk might replace fresh cows' milk.

This, in the opinion of the Medical Officers generally, can only be done for a limited period, and, in any case, there is no pecuniary advantage.

Glaxo is roughly equal in food value to 7·32 times the same weight of cows' milk. Cows' milk is at present worth 3d. per lb. Glaxo is supplied by the Food Controller at 1s. 10d. a lb., which is practically the same value as fresh cows' milk.

No relief can, therefore, be obtained from this source.

JAMES NIVEN,  
Medical Officer of Health,  
14th March, 1918.

*Resolved* (by the Infant Life Preservation Sub-Committee),—

That, subject to the inclusion of £500 for administration expenses and to the total estimate being increased to £10,500, the report and scheme of the Medical Officer of Health now submitted for the supply of milk to children under five years of age and to nursing mothers attending the Child Welfare Centres be approved on the understanding that the Committee reserve the right to reconsider their estimate at a later date in the light of further requirements.

That the Sanitary Committee be recommended to adopt the same, and to order it to be forwarded to the Finance Committee for presentation to the Council and the Local Government Board in accordance with Standing Order 69 (13).

*Resolved* (by the Sanitary Committee),—

That the following estimate of expenditure under Standing Order 69 (13) be approved and forwarded to the Finance Committee, and that—if approved by the Council and the Local Government Board—provision be made therefor in the Annual Estimates:—

Particulars	Amount contemplated in the first year
	£
Provision of Milk to children under five years of age and to nursing mothers under the Order of the Local Government Board entitled "The Local Authorities (Food Control) Order (No. 1) 1918" and "The Milk (Mothers and Children) Order 1918" made by the Food Controller ... ..	10,000
Administration expenses ... ..	500
	£10,500

NOTE.—Paragraph 7 of the letter of the Local Government Board dated February 9th provides for the repayment by the Board of a grant equal to 50 per cent. of the expenditure on the approved scheme.



## APPENDIX I.

Circular.  
County Councils  
and  
Sanitary Authorities.

*Supply of Food and Milk for Expectant and Nursing Mothers and  
of Milk for Infants.*

Local Government Board,  
Whitchall, S.W. 1,  
9th February, 1918.

Sir,—I am directed by the President of the Local Government Board to enclose for your information copies of Orders which have been made by the Food Controller and the Local Government Board with reference to the supply of food and milk for expectant and nursing mothers, and of milk for infants and children under five years of age. The Orders provide that any local authority within the meaning of the Notification of Births Act, 1907, may, and, when required by the Local Government Board, shall, arrange for such a supply of food or milk, subject to the conditions set out in the Orders. Order  
No. 64868

2. With regard to infants under nine months of age it is important that the Orders should be so administered as not to favour the abandonment of breast feeding whenever this is practicable. The officer referred to in paragraph 4 should use every effort to secure the continuance of breast feeding for such infants. Ministry of  
Food Order  
and Circular

3. The conditions prescribed by the Food Controller are set out in his Order, and relate to the quantity of milk which may be given in each case and the cases in which it may be supplied at less than cost price.

4. The quantity of food and milk provided may be prescribed by the Medical Officer of Health or the Medical Officer of a Maternity and Child Welfare Centre working in co-operation with the local authority, or by a person authorised by one of these officers or appointed by the local authority. The amount of milk should, in ordinary cases, be—

- (a) For children under eighteen months, not more than one-and-a-half pints daily.
- (b) For children between eighteen months and five years, not more than one pint daily.
- (c) For expectant and nursing mothers, the quantity specified by the officer referred to in this paragraph.

If dried milk or preparations of milk are used, the quantity should be such as would, when properly reconstituted, approximate to the quantities of fresh milk given above.

5. The cases in which food or milk may be supplied at less than cost price are those in which the officer referred to in paragraph 4 certifies that such provision is necessary, and that the women supplied cannot afford to pay the full price. The Board leave to the discretion of the local authority the direction to the officer as to what should constitute a necessitous case. In some districts a scale has been adopted based on the income of the family after taking into account the number of the children.

6. In providing dinners for expectant and nursing mothers, the local authority should not supply or arrange for the supply of any food which is the subject of an Order of the Food Controller, or of a scheme made by a local food committee under such an Order with regard to rationing without consultation with the local food committee.

7. In some cases the Board have already sanctioned schemes submitted to them by local authorities for the provision of food and milk for expectant and nursing mothers and of milk for infants and young children in anticipation of the powers conferred by the Orders. Where no scheme has yet been submitted, the Board hereby sanction the provision of food and milk by the local authority from the date of their Order on the conditions laid down in the Circular, and on the further condition that the arrangements made and an estimate of the cost up to the 31st March, 1918, are communicated to them at an early date. Where a local authority wishes to vary the conditions laid down, the Board's sanction should be previously obtained. The Board's grant for maternity and child welfare is available in respect of expenditure on the purposes of the Orders, and will amount to half the expenditure on the approved scheme. Application for the grant may be made after the 31st March next in connection with the general grant for maternity and child welfare.

8. It is open to the local authority to arrange for the supply of food and milk under the Orders by a voluntary agency engaged in maternity and child welfare work in their district. In such a case the Board suggest that the local authority should pay the expenditure of the voluntary agency in supplying food and milk at less than cost price, and should apply to the Board in due course for a grant in aid of the expenditure.

9. The Board trust that the local authority, if they have not already done so, will at once consider the needs of their district in respect of the provision of food for expectant and nursing mothers and of milk for these mothers and for children under five, both in regard to the ability of the women concerned to pay for the necessary food and milk and to the sufficiency of the supply of milk. Where the supply is insufficient, the local authority should urge the local food committee to take action under the Priority Scheme of the Food Controller.

10. The Board learn from the Food Controller that some of a stock of dried milk which he purchased last year is still undisposed of. As indicated in the enclosed letter which he circulated last autumn, this milk can be supplied to Medical Officers of Health, Infant Welfare Centres, and other similar institutions at cost price. Where difficulty exists in obtaining an adequate supply of fresh or dried milk for mothers and young children locally, the local authority should avail themselves of the Food Controller's offer. The Orders apply to such milk, and the Board's grant is available in respect of expenditure in supplying it on the same conditions as obtain for fresh milk supplied under the Orders.

11. The Orders and this Circular will be placed on sale, so that copies may shortly be obtained, either directly or through any bookseller, from H.M. Stationery Office at the following addresses:—Imperial House, Kingsway, London, W.C. 2; and 28, Abingdon Street, London, S.W. 1; 37, Peter Street, Manchester; and 1, St. Andrew's Crescent, Cardiff.

I am, Sir,

Your obedient Servant,

H. C. MONRO,  
*Secretary.*

To the Clerk to the Council.

## APPENDIX 2.

STATUTORY RULES AND ORDERS, 1918.  
No. 189.

DEFENCE OF THE REALM.  
Ministry of Food.

*The Milk (Mothers and Children) Order, 1918, dated the 8th February, 1918, made by the Food Controller under the Defence of the Realm Regulations.*

In exercise of the powers conferred upon him by the Defence of the Realm Regulations, and of all other powers enabling him in that behalf, the Food Controller hereby orders as follows:—

1. Any Local Authority within the meaning of the Notification of Births Act, 1907, may, and, when required by the Local Government Board, shall arrange for the supply of food and milk for expectant mothers and nursing mothers and of milk for children under five years of age, subject to such conditions as may from time to time be prescribed by the Food Controller. Supplies of Food and Milk to Mothers or Children
2. Until further notice, the following conditions shall be observed:— Conditions
  - (a) The quantities of food and milk to be supplied shall not in any case exceed the amount certified to be necessary by the Medical Officer of Health, or the Medical Officer of a Maternity or Child Welfare Centre working in co-operation with the Local Authority, or by a person authorised in that behalf by either of such Medical Officers, or by some other person appointed by the Local Authority for this purpose.
  - (b) In necessitous cases in which the Medical Officer of Health or the Medical Officer of a Maternity or Child Welfare Centre working in co-operation with the Local Authority, or any person authorised in that behalf by either of such Medical Officers, or by some other person appointed by the Local Authority for this purpose, certifies that the provision of food or milk is necessary, food or milk may be supplied free or may be sold at less than cost price.
3. A Local Authority may, and, when required by the Local Government Board shall, combine with another Local Authority or with any Local Food Control Committee in the exercise of the powers hereby given to the Local Authority, or may, with the approval of the Local Government Board, delegate all or any of such powers to the Committee. Contribution of Local Authorities
4. The expression "Milk" for the purpose of this Order shall include any preparation of milk which may be prescribed by the Medical Officer of Health or by the Medical Officer of a Maternity or Child Welfare Centre working in co-operation with the Local Authority. Interpretation
5. (a) This Order may be cited as the Milk (Mothers and Children) Order, 1918. Title and extent of Order  
(b) This Order shall apply only to England and Wales.

RHONDDA,

*Food Controller.*

8th February, 1918.

## APPENDIX 3.

64,868

(8th February, 1918.)

## ORDER UNDER THE DEFENCE OF THE REALM REGULATIONS.

THE LOCAL AUTHORITIES (FOOD CONTROL) ORDER  
(No. 1), 1918.

To THE COUNCILS of the several Administrative Counties in England and Wales, other than the London County Council;

To THE MAYOR, ALDERMEN, AND COMMONS of the City of London, in Common Council assembled;

To THE COUNCILS of the several Metropolitan Boroughs, Municipal Boroughs, and other Urban Districts in England and Wales;

To THE COUNCILS of the several Rural Districts in England and Wales;

To THE COUNCIL of the Isles of Scilly;

And to all others whom it may concern.

WHEREAS by Regulation numbered 2J of the Defence of the Realm Regulations it is among other things provided that We, the Local Government Board, may, by arrangement with the Food Controller, confer and impose on any Local Authorities and their officers any powers and duties in connection with the enforcement of certain of the Defence of the Realm Regulations, and any powers and duties necessary to provide for the due discharge of any functions assigned to Local Authorities by any Order made by the Food Controller under the said Regulations;

And whereas the Food Controller has, in pursuance of the said Regulations, made the Milk (Mothers and Children) Order, 1918:

NOW THEREFORE, in pursuance of Our powers in that behalf, and by arrangement with the Food Controller, We hereby Order as follows:—

ARTICLE I. We hereby confer and impose upon every Local Authority within the meaning of the Notification of Births Act, 1907, and upon such of their officers as they may designate or appoint for the purpose, the powers and duties necessary to provide for the due discharge within their district, in conformity with the Defence of the Realm Regulations, of the functions assigned to Local Authorities by the Milk (Mothers and Children) Order, 1918.

ARTICLE II. (1) Any expenses incurred by a Local Authority in the execution of this Order shall be defrayed in the same manner as expenses of the Local Authority are defrayed under the Notification of Births Act, 1907.

(2) Where any Local Authorities have combined for the purposes of this Order, any expenses incurred by those Local Authorities under this Order shall be defrayed in such proportions as may be agreed upon, or in default of agreement as may be determined by the Local Government Board.

ARTICLE III. This Order may be cited as "The Local Authorities (Food Control) Order (No. 1), 1918."

Given under the Seal of Office of the Local Government Board this Eighth day of February, in the year One thousand nine hundred and eighteen.

W. HAYES FISHER,

*President.*

L.S.

H. C. Monro,  
Secretary.

## APPENDIX 4.

## STATEMENT SHOWING HOW A "STANDARD" INCOME IS ARRIVED AT.

Three principal groupings enter into the calculation, viz. :—  
*Food, Household Sundries, and Rent.*

FOOD.

In pre-war days 6d. per day was the amount allowed for each man to cover the cost of food. At the present time, owing to the extremely high prices, 1s. per day is allowed, or an increase of 100 per cent.

Taking the food of a man as the unit—"1"—the following equivalents are used in expressing the diet required by persons of different age and sex :—

A Woman	required	$\frac{8}{10}$ or	·8	the food of a man.
A Boy	(14 to 16 years inclusive)	requires	·8	the food of a man.
A Girl	(14 " 16 " " " )	"	·7	" "
A Child	(10 " 13 " " )	"	·6	" "
A Child	( 6 " 9 " " )	"	·5	" "
A Child	( 2 " 5 " " )	"	·4	" "
A Child	(Under 2 years)	"	·3	" "

HOUSEHOLD SUNDRIES AND RENT.

Having estimated the cost of food for a family for a week on the above lines, the items *Household Sundries* and *Rent* are then added.

To estimate the *Cost of Household Sundries*, the following table ("Attwaters") is used, increased 100 per cent. for present usage :—

	(Pre-war)	(Present Day)
	s. d.	s. d.
1 Man ... ..	2 6	5 0
1 Woman ... ..	2 6	5 0
1 Man and 1 Woman .....	3 2	6 4
1 Man, 1 Woman, and 1 Child ... ..	3 9	7 6
1 Man, 1 Woman, and 2 Children ... ..	4 4	8 8
1 Man, 1 Woman, and 3 Children ... ..	4 11	9 10

and so on, adding 7d. and 1s. 2d. respectively for each additional child.

For the time being, a special allowance of 2s. 6d. per week per child of three years of age and under is made,

EXAMPLE.

A labourer earning 30s. 3d. per week having a wife

and three children	$\left\{ \begin{array}{l} 9 \text{ years} \\ 4 \text{ " } \\ 12 \text{ months} \end{array} \right.$	Rent 5s. 6d.	
Man			= 1·0
Woman			= ·8
Child 9 years	= ·5	(Decimals equivalent to shillings).	
" 4 "	= ·4		
" 12 months	= ·3		

3·0 Shillings—or cost for one day for family for food.

7 days

21·0 = Shillings—or cost for one week for family for food.

2·6 = Special allowance for a child of 3 or under.

5·6 = Rent.

9·10 = Household sundries increased 100 per cent.

38·10

Standard Income for this family	=	£	s.	d.
Actual " " "	=	1	18	10
		1	10	3

The Infant Life Preservation Special Sub-Committee, however, required a further report on the proposed administration of the Scheme, which was presented on May 3rd, 1918, and which was approved and adopted.

PUBLIC HEALTH OFFICE,  
Manchester,  
30th April, 1918.

(1) SCHEME FOR THE PROVISION OF MILK UNDER COST.

It is proposed that Milk under cost shall be distributed at all the existing centres for consultations and clinics in connection with the Child Welfare Scheme.

The conditions under which this distribution will be made are as follows :—

The income of the family to which a nursing mother or child under five belongs must not be above the standard rate of income arrived at in the manner described in the report of the Finance Committee to the Council.

All milk must be prescribed by the Medical Officer for the time being in charge of the Centre, and no milk tickets or milk must be supplied at a reduced cost without the production and filling-in of such prescription, which must be separate for each person, and give the name, age, and address.

The maximum amounts prescribed will be 1 quart for each nursing mother per diem, 1½ pints for each child under 18 months of age, and 1 pint for each child over 18 months of age and under five years, or the equivalent.

Tickets will be issued for a period of one week.

Every child prescribed for, under two years of age, must attend at the Centre to be weighed not less than once in 14 days, and children over two years of age must attend at the Centres to be weighed not less than once a month, and a separate record of weights must be kept for each child.

No milk or milk tickets must be supplied until the income has been ascertained, and it will be the duty of the Superintendent Nurse, on receipt of an application for a supply of milk at a reduced cost forthwith, to transmit such application to the Charity Organisation Society's Offices at 133, Deansgate, unless the application is for any reason inadmissible, as, for example, might be the case if the family resided outside the City, or if the child were unable to attend the Centre. No credit will be given.

The Milk Supply Tickets will be issued as hitherto, and orders will be sent to Milk Vendors in the neighbourhood of the Centre or elsewhere as may prove to be convenient.

Milk will include fresh milk, full cream dried milk, and specially-prepared cow's milk. The brands of dried milk which can at present be supplied are "Glaxo," "Cow and Gate," and "Trufood."

So far as practicable, in purchasing dried milk, care will be taken to ascertain that it has been recently manufactured.

(2) *Duties of the Superintendent Nurse.*

The Superintendent Nurse will have the following duties in connection with the milk supply.

She will see that applications for milk at a reduced cost are transmitted to the Charity Organisation Society.

She will see that all children to whom milk at a reduced cost is supplied are weighed as stated above, and that the weights are recorded.

She will bring all applications, which are suitable, before the Medical Officer in charge, filling in the prescription forms, as far as practicable, before taking them to the Medical Officer. Any mother or child requiring attention or advice will be brought by her to the Medical Officer. She will ascertain, at a visit of the mother or person in charge of a child to whom milk is supplied, that there has been no change in the family circumstances since the last time on which tickets were issued, and in no case at longer intervals than one month.

She will prepare and transmit to the Medical Officer of Health each week a return showing for the previous week the number of new persons receiving milk and the number of all persons receiving milk during the week, the total amount of milk sold in pints, and the cost to the Corporation. Persons to be classified as nursing mothers, children under 18 months, and children over 18 months of age. In preparing this return, assistance will be given by the Clerk to be appointed.

She will see that milk is supplied only on prescription by the Medical Officer, and after the income has been investigated.

She will take charge of all duplicates of tickets sold which are retained at the Centre.

The Superintendent Nurse will note whether the child is clean, free from vermin, and well or ill nourished. If the conditions are unsatisfactory, she will make enquiries about the home and the health of other members of the family, and advise the mother accordingly. Should her information appear to require a visit to the house, she will report the case to the Medical Officer of Health.

She is to impress on mothers the immense benefit to the child of having milk from the breast in preference to artificial feeding of any kind. If cow's milk is to be used, she is to impress on the mothers the necessity for all such milk to be boiled before it is used for feeding the child.

### (3) *Clerical Duties.*

Milk tickets will be sold as on the previous arrangement of the School for Mothers, that is to say, three tickets will be filled in, one of which is a record and is retained, one is a receipt and kept by the mother, and one is sent along with others to the milk dealer once a week and is an order to supply. The receipt which the mother takes is collected by the milk dealer at the end of the week, and is by him sent to the Centre as his proof that he has supplied the milk. This receipt is used to check the milk dealer's account. (Appendix 1.)

These tickets have hitherto been sold by the voluntary workers of the School for Mothers. But as the work increases this will become impossible, and three clerks will be required to assist the voluntary workers to carry out the sales at the present Centres, according to a table prepared by Miss Armitage (attached), and to prepare a Statement of Accounts. Their hours of attendance to assist in the sale are shown on the attached slip. (Appendix 2.) But they will be required for other days to collect and prepare statements and records from the papers of the voluntary workers, and from these to prepare a Statement

of Accounts. Their time will be fully occupied in doing this work, and in calling on dairies to check statements and make arrangements. If these clerks further attend to additional Milk Centres it will be as much as they can manage.

All financial statements and reports will be made by these clerks and brought to the Public Health Office, where they will be checked.

As the work increases, additional clerical assistance will be needed.

(4) *Collection of Money.*

All monies received from the sale of milk, whether by the clerks or by the voluntary workers, will be collected by the clerks and brought to Mr. Dunks, who will pay the same to the City Treasurer.

It will be necessary, however, for this particular purpose to obtain a release from the Standing Order forbidding petty cash sales.

(5) *Arrangements for New Centres.*

Three new Centres are proposed: one in Crumpsall village, one in Oldham Road, Newton, and one in Abbey Hey.

To attempt more would be to defeat the proposal by overloading it with administrative expense.

Two rooms will be required at each new Centre, a waiting and consulting room, a weighing machine, stationery, chairs, benches, and a cupboard, for one half-day a week.

A Medical Officer will attend one half-day once in each fortnight. Afterwards the rooms will be needed for a whole day, and the Medical Officer will be in attendance once a week.

At first, Superintendents will be borrowed from the Child Welfare Centres for half a day, thus saving the expense of a Nurse.

It may be anticipated that mothers will not attend so much during May, when they cannot save more than 7d. a week on a quart of milk, unless they need advice.

But if dried milk is sold at less than it costs the Centres, and it is a valuable article in the diarrhoea season, the inducement will be considerable.

An important report on dried milk by Dr. Coutts, which has been issued by the Local Government Board, has been sent to each of the Medical Officers.

(6) *The Staff Required for each New Centre.*

The distribution of milk will require the following services:—Existing Medical Officers, Medical Officers for three new Centres once a week at £1 1s. per attendance, existing Superintending Nurses, afterwards an additional Nurse and 3 Clerks.

The administrative cost of each of these new Centres will be as follows, after some time:—

	£	s.	d.
Medical Officer once a week ... ..	1	1	0
Two rooms, heating, lighting, and cleaning for a whole day, 2 sittings	0	10	0
Share of 3 Clerks ... ..	0	10	9
Tram fares ... ..	0	1	0
	<hr/>		
	£2	2	9



	£	s.	d.
For each Centre at 52 weeks this gives... ..	111	3	0
For 3 Centres ... ..	333	9	0
3 Weighing Machines ... ..	12	15	0
3 Cupboards ... ..	30	0	0
6 Bench seats ... ..	4	10	0
6 Tables ... ..	12	0	0
9 Chairs at 5s. ... ..	2	5	0
Stationery ... ..	15	0	0
	409	19	0
Add remaining salaries of 3 Clerks ... ..	251	11	0
	661	10	0
Total cost of administration ... ..	£661	10	0

Owing to the fact that the full Scheme will not be ready to put into operation before June 30th, it is safe to assume that the sum of £500 estimated for administrative expenses will not be exceeded during the year.

The expense will not be so heavy at the start, but it should be understood that the above statement of expenditure is based on expected early conditions, and that, as numbers increase, it will probably be necessary to add to it.

(7) *Financial.*

When a mother or guardian has made an application for milk at a reduced cost, the name and address of the person applying is sent by the Superintendent Nurse to Mr. Lomax, at 133, Deansgate, for investigation of the family circumstances.

The result of this investigation is then forwarded to the Medical Officer of Health, in whose department the living income is calculated. The ascertained income and living income are sent back to the Superintendent Nurse, and, if the ascertained income of the family is below the living income, the case is submitted by the Nurse to the Medical Officer in charge, who prescribes for the case, and advises the mother as to the management of her child. Where this is not needful, advice is given by the Nurse.

It will not be possible to extend the system of house visiting to the new Centres—which we may call Milk Centres—without an immediate increase in the Nursing Staff, and, in any case, such visiting can only be limited in amount even at existing Centres.

Every week a full financial statement is received by the Medical Officer of Health from each Centre, and the course of the expenditure is closely watched.

The money available and needed each month will be divided in proportion to the average attendances in the previous two months.

The course of recent expenditure is shown on the attached table (Appendix 3). But the total sum required each month will, of course, depend on the number of applications received and allowed.

A statement of expenditure will be placed every month before the Infant Life Protection Sub-Committee.

JAMES NIVEN,  
*Medical Officer of Health.*

*Resolved,—*

That the Standing Orders Committee be asked to recommend the Council to amend Standing Order No. 71 by the addition thereto of the following clause:—

(g) Sales by the Sanitary Committee of fresh and dried milk to children under five years of age and to nursing mothers attending the Child Welfare and Milk Distribution Centres.

APPENDIX I.

(Retained)

(Sent to Dairyman)

(Handed to Mother)

Name .....

PLEASE DELIVER

RECEIVED

Address .....

.....Pints of Milk daily

.....pints of Milk.

.....

to Mr .....

.....Pints for

of .....

Mrs. ....

.....days.

for.....days, From .....

From .....

Centre.....

Centre.....

## APPENDIX 2.

	Monday	Tuesday	Wednesday	Thursday	Friday
Ancoats ... ..	9-30 X	9-30 VX	...	...	...
Openshaw ... ..	2-30 X ...	or 9-30 X ...	9-30 U 2-30 V	... ...	9-30 X ...
Collyhurst ... ..	9-30 V ...	... ...	... ...	9-30 X 2-30 X	... ...
Rosamond Street West...	9-30 V ...	... 2-30 V	9-30 X ....	... ...	... 2-30 X
Gorton ... ..	2-30 X	...	2-30 V	2-30 X	...
Didsbury ... ..	...	...	9-30 X	...	...
Cheetham ... ..	... ...	... 2-30 V	... 2-30 X	9-30 X ...	... ...
Lower Moss Lane... ..	...	...	...	9-30 V	9-30 X
Ardwick ... ..	... ...	9-30 X ...	... ...	... 2-30 V	... ...
Levenshulme ... ..	...	2-30 X	...	...	...
Rusholme ... ..	...	...	...	...	2-30 X

X = Attendance of Milk Clerk.

V = Attendance of Voluntary Worker.

Proposed Time Table for 2 Clerks.

It appears desirable to comment on this report.

*Section 1.*—Dried milk is sold at the Centres. Fresh milk is obtained from milk vendors as explained. The credit system is abandoned.

*Section 2.*—It is made the duty of the Superintendent Nurse to ascertain that no change occurs in the family circumstances. This was not carried out, and has been transferred to the clerks. Preparation of weekly statements: This, also, has been transferred to the milk clerks.

*Section 3.*—Clerks. Three clerks have been appointed, and the financial difficulty has thus been greatly reduced.

*Section 5.*—Arrangements for new Centres. After much difficulty, 15 Centres in all were arranged, 10 at Maternity and Child Welfare Centres under the Corporation, 3 at similar Centres under the School for Mothers, and 2 at Catholic Centres.

*Section 6.*—It will be understood that each Milk Centre becomes, *ipso facto*, a Consultation Centre, and that medical attendance becomes necessary.

*Section 7.*—Early in 1919 the Maternity and Child Welfare Sub-Committee decided to take over the investigation of family incomes after prolonged and searching enquiry, and this duty has been discharged by the three Special Inspectors attached to the Medical Officer of Health. The arrangement, though good from the point of view of these investigations, is not an economical one, and special investigators will be appointed. It was only possible by the return from active service of two of these Inspectors. It is necessary, financially, to safeguard every point of the scheme. Thus the applications should receive preliminary enquiry before being sent on. The investigation of family incomes must be systematically and carefully carried out. Milk must not be recommended or prescribed for at the Centres irrespective of these enquiries. As a matter of fact, it has been necessary to accord a certain amount of freedom to Medical Officers at the Centres to issue orders in case of urgent need preliminary to enquiry. But, unless this is done only after all possible enquiry into family circumstances, it will have to be abandoned. Such a scheme as the above can only be worked with fairly rigid adherence to conditions throughout on the part of all concerned. It should be added that the School for Mothers has given every assistance in carrying out this condition. It is understood, further, that cases stated to be urgent shall be at once enquired into.

The cases of illegitimate and foster children need special consideration, and must be determined in each instance on consideration of all the circumstances. If, for example, the mother of an illegitimate child is working, and is staying at home, she may need no help. If she is not living at home she probably will. Or, again, she may be acting as housekeeper to her father. In that case, again, she will probably not require help. But each case can be quite well weighed up after the facts are ascertained.

No provision is made in the scheme for pregnant women, as the assistance contemplated is in the form of milk, and it is not necessary that pregnant women should have milk.\* The following statement on the assistance which might be given to pregnant women was prepared for the Sub-Committee, but it was not carried into effect as the administrative difficulties appeared too great.

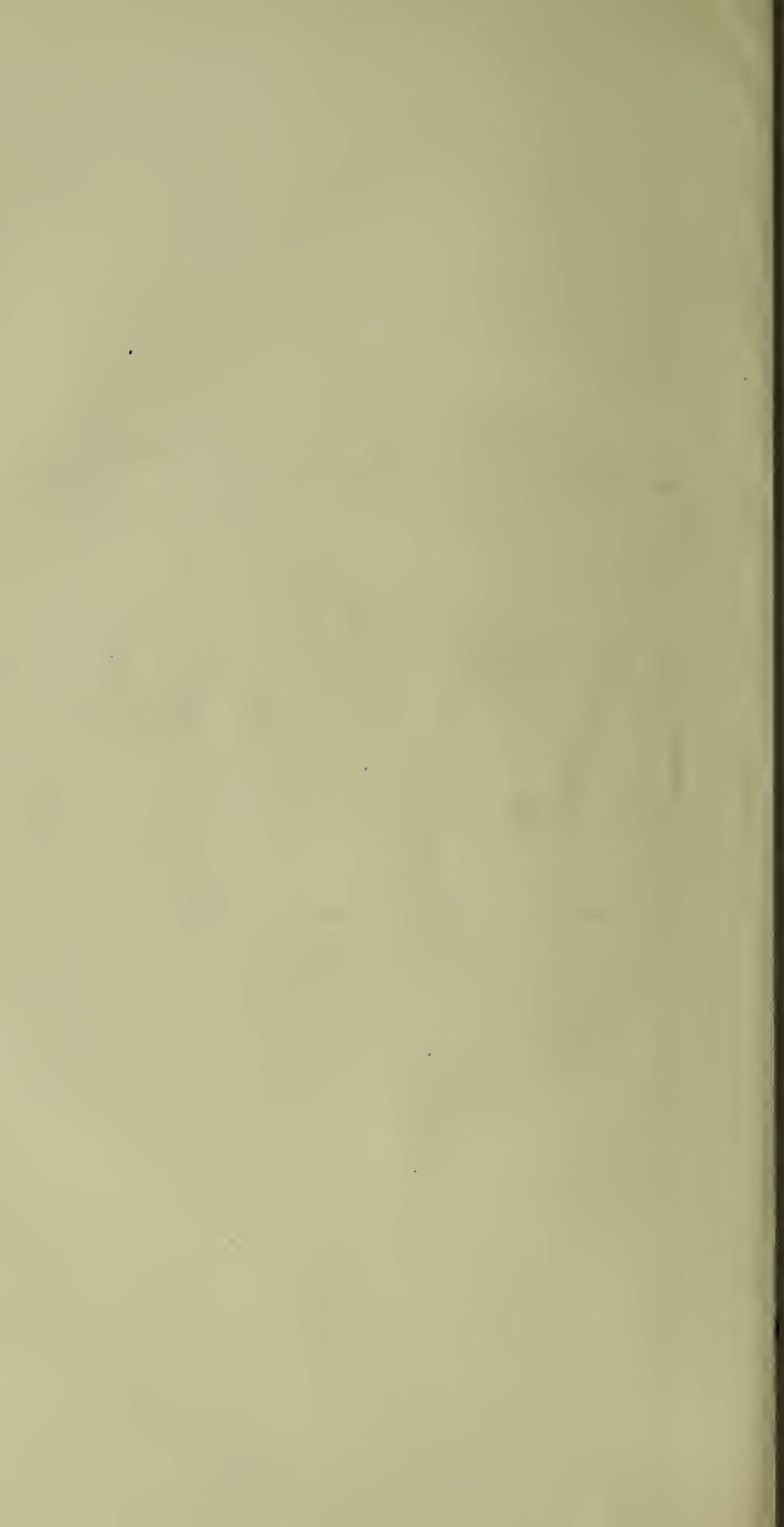
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\* Milk is now sold at half-cost to women during the last three months of pregnancy.

APPENDIX 3.

PROVISION OF MILK AT CHILD WELFARE CENTRES.

WEEK ENDING 1918	TOTAL HAVING MILK										AMOUNT OF MILK SOLD (pints)										TOTAL COST TO CORPORATION OF MILK SOLD										
	Rosamond Street	Manipur Street	Cheetham Hill Road	Mill Street	Collyhurst	West Gorton	Lower Moss Lane	Higher Ardwick	Didsbury	TOTAL	Rosamond Street	Manipur Street	Cheetham Hill Road	Mill Street	Collyhurst	West Gorton	Lower Moss Lane	Higher Ardwick	Didsbury	TOTAL	Rosamond Street	Manipur Street	Cheetham Hill Road	Mill Street	Collyhurst	West Gorton	Lower Moss Lane	Higher Ardwick	Didsbury	TOTAL	
March 9th ... ..	79	118	119	47	...	109	48	20	...	540	857	1309	1554	483	...	875	360	161	...	5599	£ s. d.	£ s. d.	£ s. d.	£ s. d.	...	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
.. 16th ... ..	80	79	57	26	...	35	45	19	14	352	868	770	469	248	...	283	327	136	96	3137	1 13 8	2 8 2	1 9 2	0 15 6	...	0 17 9	0 13 7	0 6 3	0 6 0	8 10 1	
.. 23rd ... ..	61	86	54	25	...	31	42	13	14	329	574	738	392	241	...	245	290	94	96	2670	1 3 11	2 5 11	1 4 7	0 15 1	...	0 15 4	0 12 2	0 4 1	0 0 0	7 7 1	
.. 30th ... ..	53	68	31	16	...	24	42	9	14	257	483	588	231	150	...	192	308	66	96	2114	1 0 1	1 16 9	0 14 6	0 9 4	...	0 12 0	0 12 10	0 3 2	0 0 0	5 14 8	
April 6th ... ..	44	85	27	10	...	18	34	7	14	239	402	658	213	94	...	147	248	52	96	1910	0 16 9	2 1 1	0 13 7	0 5 11	...	0 0 2	0 10 5	0 2 4	0 0 0	5 5 3	
.. 13th ... ..	47	78	37	17	...	19	39	8	14	259	448	626	343	164	...	151	148	68	96	2044	0 18 8	1 19 2	1 1 5	0 10 3	...	0 9 4	0 12 4	0 2 6	0 0 0	5 10 8	
.. 20th ... ..	45	84	38	15	...	24	41	13	10	273	381	696	296	171	...	194	311	94	177	2320	2 7 8	4 7 0	2 2 0	1 13 4	...	1 4 3	1 18 11	0 12 3	1 2 1	15 7 0	
.. 27th ... ..	52	94	59	17	...	26	48	12	12	311	441	766	441	168	...	210	329	87	182	2624	2 15 1	4 15 10	2 15 1	1 4 6	...	1 6 3	2 1 1	0 11 1	1 2 9	16 11 8	



## MATERNITY AND CHILD WELFARE SUB-COMMITTEE.

*Allowances to Pregnant Women.*

In accordance with the recommendations of the Local Government Board, it is advised that allowances should be granted to pregnant women requiring nourishments to the extent of one quart of cheap milk, or the equivalent in other foods. If the price of cheap milk be fixed at 4d. the allowance per week will be 2s. 11d., if at 5d. it will be 2s. 4d.

It is proposed that this sum be granted either as milk or as other proteid-containing food as the mother may desire, and as the Medical Officer at the Centre may prescribe.

A slip would be prepared in duplicate for the following articles:—

		Price	Cost to the
		per lb.	Corporation
Oatmeal	lbs.	4½d.	
Herring		7d.	
Mackerel		8d.	
Milk	Pints	2½d.	
Peas		9d.	
Beans		6d.	
Lentils		6d.	
Flour		3d.	

*Allowance to Expectant Mother for One Week, value 2s. 11d.*

	lbs.	Tradesman
Oatmeal		
Herring		
Mackerel		
Peas, Beans, or Lentils		
Flour		

This slip would be copied in duplicate, one half being retained at the Centre, and half being given to the mother who would require to purchase the foods indicated at an assigned shop to be ascertained, where she would hand in her ticket on receipt of the article.

The tickets would then be sent to the Centre by the tradesmen, checked and paid for by the Corporation.

In the case of milk, the system at present in force would be followed.

For example, the prescription might be as follows:—

		s.	d.
Herring	1lb.	0	7
Lentils	1lb.	0	6
Oatmeal	1lb.	0	4½
Milk	3 pints	1	3
Flour	1lb.	0	3
		<hr/>	
		2	11½
		<hr/>	

JAMES NIVEN,  
*Medical Officer of Health.*

It will be seen that the City would have to be divided into assistance areas, and butchers, fish dealers, grocers, etc., appointed for each area. At the time other and pressing duties arose. In addition, there is the difficulty about making out the prescriptions. The proposal was therefore given up, and if it is deemed necessary to assist pregnant women we shall have to fall back on milk. It is true the above proposal has been carried out successfully for Tuberculosis for a number of years. But the administration is concentrated for that disease in a way which could not obtain for assistance to be given to pregnant women.

It is not at present practicable to establish Consultation or even Milk Centres in every part of the City. Each centre opened has entailed much work in finding, acquiring, and equipping, and it has been necessary to take over the leases of premises in some new cases. Such arrangements are not satisfactory, and it will be best to go more slowly and acquire new premises.

The orders already quoted contemplated arrangements by which all parts of the City may be reached, and it is now proposed that in districts in which assistance is needed, but from which a Milk Centre cannot easily be reached, applications shall be made in writing to the Medical Officer of Health, the application to be then investigated by one of the new investigators. An account will be kept in the office of all assistance granted in this way. It will, of course, not be possible for the mothers or children on whose behalf the application is made to attend at a Centre and see the Medical Officer, but, assuming that the investigators are carefully chosen, sufficient supervision may be exercised.

The following is a summary of the work carried out in 1918. One of the Centres was given up owing to insufficient number of attendances. It will be seen that the amount of milk sold under cost price fell off greatly in 1918 and only slowly recovered. This was owing to the expenditure being suddenly arrested in April, partly also to the fact that the need for assistance was not so great in the summer of that year.

It has been considered advisable to narrate the difficulties entailed in carrying out the Milk Distribution Scheme for the benefit of other Authorities. The main fact emerging is that every step must be under central control. Wherever this cannot be done, some leakage occurs.

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### CHILD WELFARE CENTRES—8 IN NUMBER.

The following table explains the course of the work during the year 1918, and requires little comment. It shows under the headings "Number of babies weighed" and "Consultations" marked progress during the year. How much of this is to be ascribed to the attraction offered by the opportunity to obtain milk at a reduced price it is not easy to say.



STATEMENT OF WORK DONE AT THE CHILD WELFARE CENTRES DURING THE YEAR 1918.

(PREPARED FROM THE RETURNS RECEIVED FROM THE CENTRES.)

1918	NUMBER OF BABIES WEIGHED											NUMBER OF NEW CASES											CONSULTATIONS											SPECIALISTS' CONSULTATIONS			TREATMENT CASES					MESSAGE					VISITS OF SUPERINTENDENTS OF THE CENTRES TO THE HOMES																							
	70-72, Rosamond Street West											70-72, Rosamond Street West											70-72, Rosamond Street West											70-72, Rosamond Street West			70-72, Rosamond Street West					70-72, Rosamond Street West					70-72, Rosamond Street West																							
	Manipur Street	Ancoats	Collyhurst Recreation Rooms	Gorton	Cheetham	Hulme	Ardwick	Abbey Hey, Gorton	Newton Heath	Lower Crumpsall	Jubilee Schools, Harpurhey	Total	Manipur Street	Ancoats	Collyhurst Recreation Rooms	Gorton	Cheetham	Hulme	Ardwick	Abbey Hey, Gorton	Newton Heath	Lower Crumpsall	Jubilee Schools, Harpurhey	Total	Manipur Street	Ancoats	Collyhurst Recreation Rooms	Gorton	Cheetham	Hulme	Ardwick	Abbey Hey, Gorton	Newton Heath	Lower Crumpsall	Jubilee Schools, Harpurhey	Total	Manipur Street	Cheetham	Total	Manipur Street	Hulme	Ardwick	Total	Manipur Street	Ancoats	Collyhurst Recreation Rooms	Gorton	Cheetham	Hulme	Ardwick	Total	Manipur Street	Ancoats	Collyhurst Recreation Rooms	Gorton	Cheetham	Hulme	Ardwick	Abbey Hey, Gorton	Newton Heath	Lower Crumpsall	Jubilee Schools, Harpurhey	Total							
For 4 weeks ending January 26th ..	492	618	199	349	606	420	270	157	..	..	..	3111	36	63	14	37	48	37	24	21	..	..	..	280	288	377	152	261	316	209	194	102	..	..	..	..	1899	69	89	78	236	322	184	202	22	730	21	50	34	28	23	29	26	18	229	90	126	50	90	90	75	94	91	..	..	..	..	715		
For 4 weeks ending February 23rd ..	661	887	325	473	745	619	327	243	..	..	..	4280	50	81	15	76	66	81	23	39	..	..	..	431	387	448	221	271	346	322	212	139	..	..	..	..	2346	114	153	118	385	459	250	246	42	997	51	55	62	34	43	30	39	23	337	72	119	44	92	90	80	90	114	..	..	..	..	710		
For 4 weeks ending March 20th ..	728	992	323	458	771	509	310	282	..	..	..	4373	54	89	27	41	49	52	26	26	..	..	..	364	395	543	216	280	426	252	220	168	..	..	..	..	2500	138	167	70	375	528	271	213	45	1057	72	63	56	45	61	9	23	37	366	91	138	30	97	109	100	113	128	..	..	..	..	806		
For 4 weeks ending April 26th ..	429	733	156	327	516	260	217	218	..	..	..	2856	34	56	11	28	45	30	16	23	..	..	..	243	234	429	115	271	300	141	165	142	..	..	..	..	1797	85	99	62	246	303	190	147	56	696	43	67	21	42	37	8	27	24	269	77	119	65	77	81	73	83	99	..	..	..	..	674		
For 5 weeks ending May 31st ..	528	824	199	332	623	345	265	235	..	..	..	3351	39	81	25	31	62	43	18	30	..	..	..	329	269	404	141	240	348	184	209	132	..	..	..	..	1927	117	135	42	294	358	244	159	42	803	52	64	38	42	40	9	38	31	314	74	114	34	81	103	28	75	49	..	..	..	..	558		
For 4 weeks ending June 29th ..	539	795	220	333	696	340	242	259	..	..	..	3424	49	71	21	39	58	36	14	25	..	..	..	313	248	446	144	255	347	145	163	158	..	..	..	..	1906	101	112	26	239	355	241	148	50	794	58	77	46	38	63	16	40	33	371	66	77	47	76	99	..	71	55	..	..	..	..	491		
For 4 weeks ending July 26th ..	510	802	219	327	543	277	197	276	..	..	..	3151	41	77	20	34	41	28	19	18	..	..	..	278	253	446	148	275	332	166	154	149	..	..	..	..	1923	127	129	27	283	327	247	136	62	772	69	83	14	50	52	19	34	49	370	48	98	25	90	35	73	78	105	..	..	..	..	552		
For 5 weeks ending August 31st ..	674	1114	275	360	864	476	351	378	..	..	..	4492	46	89	20	56	68	39	36	27	..	..	..	381	312	657	186	279	466	265	263	218	..	..	..	..	2646	135	166	44	345	407	353	227	81	1068	109	138	30	88	74	36	54	67	588	127	155	103	137	153	44	120	111	..	..	..	..	950		
For 4 weeks ending September 28th ..	593	1018	257	424	697	332	315	317	14	31	15	3983	44	77	23	68	45	28	39	28	14	16	13	395	297	561	190	314	358	231	231	183	13	30	..	..	2408	112	142	28	282	322	277	176	78	853	105	145	29	109	75	33	39	67	602	76	72	37	44	114	97	59	52	..	..	..	..	551		
For 4 weeks ending October 25th ..	640	1123	299	536	896	487	412	395	70	167	25	5117	49	87	25	56	70	43	52	37	16	61	5	41	542	442	608	208	384	462	344	289	217	51	147	25	60	3237	..	148	64	212	340	319	187	75	921	51	161	31	95	96	56	32	46	568	47	101	25	81	120	90	42	78	..	22	..	12	618	
For 5 weeks ending November 30th ..	606	1216	318	588	1048	516	443	449	100	180	55	5647	54	97	35	79	95	43	40	42	11	39	7	30	572	468	742	230	429	647	383	341	250	52	150	46	68	3806	..	141	..	141	376	427	247	122	1272	101	149	43	90	110	53	28	49	623	83	142	72	86	124	114	90	116	..	..	..	..	5	832
For 4 weeks ending December 28th ..	401	841	216	395	697	328	237	266	63	163	31	3646	20	52	24	43	37	20	14	19	9	28	..	13	279	289	470	167	285	387	258	168	134	42	115	15	61	2391	..	111	..	111	285	297	140	62	784	55	85	23	100	42	37	21	44	407	66	39	40	59	76	95	49	68	..	16	..	..	25	533
Total ..	6771	10063	3006	4902	8612	4909	3586	3475	247	550	126	47431	516	920	260	588	684	480	321	335	50	144	25	84	4407	3882	6131	2118	3544	4735	2900	2609	1992	158	442	86	189	28786	998	1592	559	3149	4482	3300	2228	737	10747	787	1137	427	753	716	335	401	488	5044	926	1300	572	1010	1194	878	964	1066	..	38	..	..	42	7990
1917 Total ..	7089	9439	3577	3794	7232	3554	2634	1597	..	..	..	38796	666	1028	340	577	667	467	280	189	..	..	..	4214	3749	4956	2438	2363	3888	2514	1665	793	..	..	..	..	22360	1372	1788	104	3264	2229	1873	1251	180	5533	474	695	493	43	289	153	391	59	2597	816	1187	742	900	741	930	858	837	..	..	..	..	7011		



It must be in great measure ascribed to the excellent work done by the Medical Officers and Superintendents of the Centres.

It should be pointed out that four additional Centres were added during 1918, of which one at Crumpsall was subsequently discontinued, owing to insufficient attendance of mothers.

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#### MANCHESTER SCHOOLS FOR MOTHERS.

ANNUAL STATEMENT BY MISS H. K. ARMITAGE, *Hon. Secretary.*

During 1918 the Child Welfare Centres and Schools for Mothers grew steadily busier in all branches of the work. The Schools for Mothers' helpers carry out the routine work at the consultations, such as filling-in case papers for new babies, weighing the children, registering the weights, marshalling the mothers into the doctors' and the masseuse rooms in their turns, and selling such things as dried milk and emulsion, as may have been ordered. This means that four helpers are needed on a busy consultation day. There are now 32 consultations a week, so that the voluntary staff for this side of the work alone is considerable.

In addition to the 11 Corporation Centres, there are 3 in the outlying districts of Didsbury, Rusholme, and Levenshulme. They were opened by the Schools for Mothers to demonstrate the need for Child Welfare Work in these and similar localities, and are in all respects like the recognised Corporation Centres, except that no treatment is provided. The growing attendances show that the advice and teaching are as much appreciated as in the poorer parts of the town, and the doctors in charge of the consultations report that the mothers are noticeably intelligent and teachable. It is to be hoped that Clayton, Alexandra Park, Higher Openshaw, and other such districts will soon be provided with Centres.

Classes for teaching how to make simple and good children's clothes are conducted at all the Centres. Wool and materials are sold at cost price, and much good work is done. While the Classes and Health Talks are in progress the babies are looked after by voluntary helpers in other rooms, so that the women are free to give their undivided attention to the work in hand. The attendance at the various classes was 7,383 in 1918 as against 6,732 in 1917.

The Schools for Mothers have 3 Observation Nurseries in connection with the Centres at Openshaw, Collyhurst, and Ancoats. Delicate children, or those who need special care and attention without as yet being ill enough to require hospital treatment, are sent in by the doctors; they continue to attend the consultations until their health is established, when they are discharged from the Nurseries to make way for fresh cases. The average length of stay is about four months. The Open-Air Nursery in Ancoats has had a good first year, with thoroughly satisfactory health records. The hesitation of mothers to take their children there, which was met with in its early days, has vanished, and the nursery is now constantly full.

Dinners have been provided at three Centres for nursing and expectant mothers, 7,323 having been served during the year.

The Dental Clinic at 72, Rosamond Street West has now won the complete confidence of the mothers. No difficulty is experienced in persuading those who have been once to go again, and the dentist is therefore able to complete his work, and discharge his patients with their mouths in a wholesome state. It is anticipated that the Dental Clinic will play an important part in the treatment advised at the antenatal Clinics when these become well established. At present only extractions and scalings are done. The questions arise whether it is not desirable to undertake fillings, and whether the Dental Clinic should not be controlled and financed in future by the Corporation as a definite piece of the treatment provided at the Child Welfare Centres.

See also the Annual Report of the School for Mothers for the year 1918.

### THE BABIES' HOSPITAL, SLADE LANE, LEVENSHULME.

Particulars regarding the cases treated in the Babies' Hospital are given in Miss Seed's report. This hospital is staffed, medically, by the Lady Doctors of Manchester, who have taken up this branch of work enthusiastically. Every month a statement is issued giving full details as to the treatment and progress of the children admitted during the month, and the cases are followed up in their homes, after discharge, by the Health Visitors. Treatment is thus continued beyond the period for which they are retained in the hospital. It is strongly felt that the need for hospital treatment of cases of malnutrition in children under one year of age is not adequately met at present, and undoubtedly a larger hospital is urgently required.

### NOTIFICATION OF TUBERCULOSIS.

As previously mentioned, the administration connected with notification has been placed under the care of Dr. Sutherland. It must be stated that it would be a great advantage to the service if the whole of the public health work could be concentrated under one roof. As it is, other branches have now out-grown the offices in which they are carried on, and further dislocation and loss of co-ordination are threatened unless suitable premises are provided.

No change has occurred in the methods of public health administration in connection with the notification of tuberculosis. As regards the figures relating to notification, these show a striking diminution in the number of new cases notified, diminution which in the case of pulmonary tuberculosis is much greater in the case of institutions than in the case of private practitioners. This is, doubtless, owing to the extent to which in 1918 public institutions were utilised for military purposes. Still, if this was so, there should have been a corresponding increase in the number notified by private practitioners. The same marked diminution in the numbers notified is shown in non-pulmonary cases. (Tables 1A and 1B.)

It will be seen by comparing Table 2 with the same Table published in previous years that the diminution is observable at every age-group.

It coincides with a fall in the death rate, and it is permitted, therefore, to hope that the diminution is a real one, and is not due to any imperfection in notification. The only reason there could be for apprehending such imperfection is that the successive outbreaks of influenza put a very severe strain on practitioners, and may have led to some laxity. But the change appears to be too great for such an explanation. It is, however, easy to test this possibility by dividing the figures for the years 1917 and 1918 into two half-yearly periods, from which figures the point could easily be settled. The following table, showing the notification of cases of tuberculosis in months in 1914 and 1918 makes it manifest that, so far from the outbreak of influenza depressing the number of cases of tuberculosis notified, the reduction, great as it was, would have been much greater had it not been for the influenza outbreaks.

NOTIFICATIONS OF TUBERCULOSIS DURING 1914, 1915, AND 1916,  
MONTHLY AND HALF-YEARLY.

	1914	1915	1916
January .. .. .	239	198	229
February .. .. .	316	295	374
March .. .. .	392	353	366
April .. .. .	276	306	321
May .. .. .	306	306	472
June .. .. .	317	317	384
TOTALS .. .. .	1,900	1,775	2,146
July .. .. .	295	171	244
August .. .. .	194	243	328
September .. .. .	315	212	239
October .. .. .	346	237	298
November .. .. .	146	153	220
December .. .. .	294	254	197
TOTALS .. .. .	1,590	1,270	1,526

NOTE.—The above figures include *all forms* of Tuberculosis.

NOTIFICATIONS OF TUBERCULOSIS FOR YEARS 1917 AND 1918,  
MONTHLY AND HALF-YEARLY.

	Pulmonary		Other Forms	
	1917	1918	1917	1918
January .. .. .	185	186	68	62
February .. .. .	215	134	83	68
March .. .. .	192	203	68	112
April .. .. .	206	173	91	77
May .. .. .	276	156	162	75
June .. .. .	316	200	108	70
TOTALS .. ..	1,390	1,052	580	464
July .. .. .	188	194	68	51
August .. .. .	137	132	57	53
September .. .. .	151	98	55	39
October .. .. .	137	163	41	48
November .. .. .	123	92	47	30
December .. .. .	119	115	31	13
TOTALS .. ..	855	794	299	234

This Table shows a remarkable difference between the figures from January to June, and those from June to December. Doubtless tuberculosis makes its appearance more in the early months, the disease making headway during the winter months. But it is probable, also, that the tuberculous do not in summer consult practitioners to the extent that they do in winter, doing so largely because of respiratory troubles which are less likely to arise in summer than in winter. Moreover, in the last six months there is a considerable exodus of tuberculous persons from the City. The desire to get into a sanatorium in summer will also influence the April, May, and June figures. This table of frequencies is general, and not confined to the years 1917-1918. These figures however, were, got out to determine what had occurred in connection with

influenza. Dr. Sutherland has, also, prepared curves showing a sinking in of the curve of notifications coincident with the rise of the influenza wave. It is permissible to hope that this depression in the tuberculosis curve of frequencies would have been even greater in 1918 had there been no influenza, as seems to be indicated by these figures. But it is also possible that a number of cases of tuberculosis were labelled influenza. This is especially liable to occur with those intermittent attacks of fever to which the tuberculous are liable, and which might quite easily be taken to be attacks of influenza.

The Table of statistics relating to the notification of phthisis shows that notwithstanding the fact that flour as a means of disinfection has been cut off, a very convenient material for householders, disinfection has been well maintained. If we examine the row relating to cases sent to hospital, we see that the number sent, as compared with previous years (excepting 1917) is high, but is lower than it was in that year. The total number of cases under observation in 1918 was lower than in 1917, in which it may be taken to have reached high-water mark. But if the great increase in 1916-18 over previous years is observed, it will be realised how much the administrative work entailed in keeping all these cases under observation has increased. Moreover, should any great improvement occur in the results of treatment, it will for a time still further increase the administrative work.

Much dissatisfaction is expressed with the results arrived at from sanatorium treatment, having regard to the heavy expenditure which such treatment entails. This poverty of results was anticipated in Manchester when the sanatorium movement threatened to overshadow the public health preventive aspects of the question, though it was clearly realised by those who had done practical administrative work that the success of other public health measures was dependent on the provision of a certain amount of sanatorium treatment. From the public health point of view—and the successful Tuberculosis Officer must be essentially a preventive man, even if he is very skilful clinically—what want of success attends sanatorium treatment is largely due to the tendency to regard sanatorium treatment as merely a field for clinical and administrative skill. Institutional treatment, however, fails of at least half of its purpose, if frequent and systematic teaching is not given to all cases capable of receiving it, in the personal precautions necessary to render a patient non-dangerous to his or her family, and to co-workers.

To the extent to which this has been done, institutional treatment is of the utmost value from a public health point of view. The removal of infection from the home is to some extent illusory, unless this requisite is regarded as primary. But if it is so regarded, the removal of infection from the home and workshop is effected by sanatorium treatment in a double sense. Moreover, both from a humanitarian and economic point of view, the rest, improvement, and relief of

patients struggling with growing weakness and depression would be justification for a large measure of sanatorium provision. But it is now generally accepted, and to none is the recognition of this due more than to Dr. Sutherland, that further measures are required, and that colonies should be formed in which patients after discharge may live with their families and pursue such callings as they can with safety take up, to the extent that they are capable of, under medical supervision, the community supplementing their earnings to such extent as may be required. The position which Dr. Sutherland takes up is one common to him with others, so far as early cases are concerned. What is special in his views is that he lays special emphasis on the application of the colony method to quite uneconomical—that is to say to moderately advanced—cases of tuberculosis, the permanent removal of infection from the community being in his view an important part of his scheme. Fortunately, the East Lancashire Red Cross Society are about to give effect to his opinions.\* •

The figures for this year appear to indicate that the measures of public health prevention pursued in Manchester, more especially in connection with the tuberculosis office, are bearing fruit. The more favourable aspect of these figures compared with former years may be due to the better circumstances of the working-class population, coupled with the application of the knowledge which they have been gradually acquiring; as the deterioration of recent years may be due to the dislocations, distresses, and overwork during the earlier years of the war. It cannot be too much insisted upon that a knowledge of how to spend available money on a suitable diet is very important in the combat with tuberculosis. Here again the Tuberculosis Department has done valuable work under the Care Committee. But we may expect the Department of Education to see how very necessary such education is to the nation in its struggle for commercial position, and even commercial existence, threatened as that is in various ways, but in none more than by the inefficiency and loss which wait on sickness and physical impoverishment.

Fortunately, this is being realised in theory and practice more and more.

It is doubtful whether we have yet nearly reached the limits of what may be effected by way of prevention. For example, cannot the Home Office take steps to safeguard workers from breakdown due to tuberculosis, and others from infection, by a requirement that all workers shall undergo a physical examination on entry to work of such a character as will give reasonable security that tuberculous persons do not enter employments unsuited to their disease, with subsequent examination at stated intervals, say of five years. The tuberculosis officers would act as consultants in doubtful cases. Were this done, much of the present loss of life might be prevented, as

\* Since the above was written, a Conference on Tuberculosis has been held in London under the auspices of the National Society for the Prevention of Tuberculosis, and official approval was given by the Minister of Health to the extension of tuberculosis schemes to include a colony.



might also much of the infection conveyed to co-workers and relatives. Here again instruction would be given in the personal precautions requiring to be taken. Already much has been done by the Ministry of Munitions and the Home Office for the welfare of workers, but the proposed measure cannot be regarded as coming into conflict with what has already been achieved.

The following are Tables pertaining to the year 1918:—

TABLE IA.

PHTHISIS—NUMBER OF NEW CASES OF PULMONARY TUBERCULOSIS NOTIFIED DURING THE YEARS 1900 TO 1918.

Year	Poor-law Cases	Institutions	Private Practitioners	Total
1900 * .....	578	455	540	1573
1901 .....	625	373	341	1339
1902 .....	667	305	303	1275
1903 .....	556	550	251	1357
1904 .....	512	440	250	1202
1905 .....	527	588	291	1406
1906 .....	565	510	304	1379
1907 .....	634	646	310	1590
1908 .....	659	498	346	1503
1909 .....	681	542	384	1607
1910 .....	543	760	356	1659
1911 .....	517	897	423	1837
1912 .....	488	947	969	2404
1913 .....	345	717	1350	2412
1914 .....	483	877	1304	2664
1915 .....	279	740	1194	2213
1916 .....	322	817	1410	2549
1917 .....	470	716	1061	2247
1918 .....	268	563	1015	1846
Total .....	9719	11941	12402	34062

\* This table does not include 425 cases notified in 1899.

TABLE 1B.

NEW CASES OF NON-PULMONARY TUBERCULOSIS NOTIFIED ON FORM A DURING THE YEARS 1913-1918, THE ORDER OF THE LOCAL GOVERNMENT BOARD TAKING EFFECT IN FEBRUARY, 1913. (MALES AND FEMALES.)

Year	Total	
	Males	Females
1913 . . . . .	759	713
1914 .. .. .	509	395
1915 .. .. .	415	411
1916 .. .. .	416	463
1917 .. .. .	432	447
1918 .. .. .	343	350
TOTAL .. ..	2,874	2,779

TABLE 3.

CASES OF TUBERCULOSIS TREATED IN INSTITUTIONS DURING 1918.

	Baguley	Delamere	Abergele	M. R. I.
Remaining in on December 31st, 1917	290	62	46	4
Admitted 1918 .. .. .	728	184	135	34
Discharged 1918 .. .. .	603	183	134	38
Died 1918 .. .. .	156	..	1	..
Remaining in on December 31st, 1918	251	62	46	..

NOTE.—The figures here given for Abergele do *not* include the cases at Pen-y-coed.

TABLE 2.  
NOTIFICATIONS—1918.

Age Periods .. .. .	NOTIFICATIONS ON FORM A												Total Notifications on Form A	NOTIFICATIONS ON FORM B				Total Notifications on Form B	NOTIFICATIONS ON FORM C	
	Number of Primary Notifications													Number of Primary Notifications					Poor Law Institutions	Sanatoria
	0-	1-	5-	10-	15-	20-	25-	35-	45-	55-	65-	Total Primary Notifica- tions		Under 5	5-	10 to 15	Total Primary Notifica- tions			
Pulmonary Males .. .. .	1	26	65	54	103	95	208	225	187	95	39	1,098	1,368	..	2	..	2	2	227	696
„ Females .. .. .	—	20	41	61	97	82	165	127	91	41	15	740	953	..	5	1	6	7	69	423
Non-Pulmonary Males .. .. .	6	79	91	59	31	18	16	16	12	9	6	343	398	..	..	2	2	6	51	4
„ Females.. .. .	7	62	61	66	58	28	26	15	11	12	4	350	415	..	2	1	3	3	37	6
Totals.. .. .	14	187	258	240	289	223	415	383	301	157	64	2,531	3,134	..	9	4	13	18	384	1,129



Public Health Work is summarised in the following Table 4 and Statement:—

STATISTICS RELATING TO THE NOTIFICATION OF PHTHISIS.

	1918	1917	1916	1915	1914	1913	1912	1911	1901 to 1910	1899 Sep. 1 to Dec. 31 1900	Totals
<i>Persons Visited and Registered—</i>											
Males .....	1197	1431	1526	1448	1612	1543	1354	1090	9166	1017	21384
Females .....	744	922	1109	1110	1094	1052	993	717	5360	732	13833
Totals ...	1941	2353	2635	2558	2706	2595	2347	1807	14526	1749	35217
<i>Cases Disinfected—</i>											
By Corporation—											
(a) With solution of chlorinated lime only .....	2431	2934	635	869	994	822	884	754	5974	581	16878
(b) With lime solution only .....	0	0	0	0	0	0	0	0	17	109	126
(c) †By Esmarch's method and solution of chlorinated lime .....	0	0	1878	2415	3123	3044	2842	1983	9363	0	24648
Totals ...	2431	2934	2513	3284	4117	3866	3726	2737	15354	690	41652
By Tenants—											
†Esmarch's method or Chlorinated lime, &c. ....	4167	3523	1799	3580	4564	4050	3790	3342	24438	1299	54552
Totals...	6598	6457	4312	6864	8681	7916	7516	6079	39792	1989	96204
<i>Specimens of Sputum Examined:</i>											
Positive .....	401	465	721	781	1052	1165	1061	851	3524	104	10125
Negative .....	1081	1471	1720	1576	2269	2637	1876	1403	6106	154	20293
Totals ...	1482	1936	2441	2357	3321	3802	2937	2254	9630	258	30418
Cases reported as sent to Hospital .....	2315	2400	2078	1719	2718	2421	1874	1957	15426	991	33899
Identified from common lodging-houses.. ....	117	143	172	212	283	243	201	199	2279	187	4036
Number of cases under observation .....	6511	6898	6327	5690	5941	4848	4305	3484	20465	about 600	...

This number includes all forms of Tuberculosis. † Esmarch's method not used in 1917 owing to a Food Control Order.

3,429 special cases have been entered in the Business Book for investigation and cleansing after removal to hospital, change of residence, death, or under special circumstances.

389 tenants have allowed the removal of bedding, etc., for disinfection ; or have themselves burned it in a few instances.

34,000 cardboard boxes have been prepared in the office and supplied to patients for spitting purposes in the home.

222 spit bottles have been supplied for use outside the house.

9,856 visits have been made by the Enquiry Officers during the year.

34,095 letters were sent out, of which 207 were to owners with reference to the disinfection of houses, with subsequent correspondence in many instances.

The fate of patients treated in the Crossley Sanatorium and Baguley Sanatorium is set forth in the following tables. Baguley Sanatorium is an institution for advanced cases, and the results are such as might be anticipated.

If patients treated in the Crossley Sanatorium do not show a higher proportion of survivors, it is to be considered that cases have not been sent to this institution at a sufficiently early stage to obtain the best results.

TABLE 5.  
CROSSLEY SANATORIUM.

*Males.*

Year	No. of new cases	No. of re-admissions	Died in the Sanatorium	Died elsewhere	Lost sight of	Known to be still living, Dec. 31st, 1918
1905 .....	16	1	..	11	5	..
1906 .....	18	2	1	14	3	..
1907 .....	29	2	1	21	7	..
1908 .....	36	3	1	24	7	4
1909 .....	27	4	2	15	7	3
1910 .....	27	5	..	14	10	3
1911 .....	38	2	..	23	5	10
1912 .....	53	3	1	25	18	9
1913 .....	151	3	..	62	44	45
1914 .....	184	8	1	60	73	50
1915 .....	140	10	3	35	47	55
1916 .....	118	8	1	18	29	70
1917 .....	113	12	..	9	16	88
1918 .....	98	18	..	2	2	94
Total ....	1,048	81	11	333	273	431

TABLE 5—*continued.*  
CROSSLEY SANATORIUM—*continued.*

*Females.*

Year	No. of new cases	No. of re-admissions	Died in the Sanatorium	Died elsewhere	Lost sight of	Known to be still living, Dec. 31st, 1918
1905 .....	14	..	1	9	1	3
1906 .....	14	1	..	10	3	1
1907 .....	16	2	..	14	2	..
1908 .....	13	3	..	13	..	..
1909 .....	16	1	..	11	3	2
1910 .....	11	4	..	6	4	1
1911 .....	18	2	..	10	4	4
1912 .....	31	3	..	11	13	7
1913 .....	67	..	..	6	36	25
1914 .....	69	5	..	10	34	25
1915 .....	67	5	..	9	33	25
1916 .....	74	3	..	5	26	43
1917 .....	68	5	1	8	17	42
1918 .....	61	9	..	2	1	58
Total ....	539	43	2	124	177	236

TABLE 6.

## BAGULEY SANATORIUM.

*Males.*

1912 .....	49	..	13	23	6	7
1913 .....	329	17	63	152	59	55
1914 .....	246	38	54	121	35	36
1915 .....	276	46	66	112	37	61
1916 .....	403	73	120	122	47	114
1917 .....	401	76	74	74	48	205
1918 .....	390	68	45	24	16	305
Total ....	2094	318	435	628	248	783

*Females.*

1912 .....	20	..	3	9	5	3
1913 .....	167	7	32	59	59	17
1914 .....	98	5	16	31	34	17
1915 .....	87	5	20	24	24	19
1916 .....	262	16	57	96	47	62
1917 .....	277	24	55	55	65	102
1918 .....	226	44	48	24	..	154
Total ....	1137	101	231	298	234	374

The number of cases of Tuberculosis in which the income of the individual or family showed varying amounts of deficit under an assumed standard of living, and the number in which assistance was given to the individual or the family, or both, is shown in the following tables:—

TABLE 5.  
TABLE SHOWING PARTICULARS OF DISTRESS IN CASES OF PHTHISIS NOTIFIED DURING THE YEAR 1918, CLASSIFIED ACCORDING TO THE REQUIREMENTS OF THE FAMILY IN EXCESS OF THE INCOME. FOOD CALCULATED ON THE ATWATER SCALE + 100 PER CENT. HOUSEHOLD SUNDRIES CALCULATED ON MR. ROWNTREE'S SCALE + 100 PER CENT. AT END OF YEAR. EARLY IN 1917 SCALE WAS INCREASED BY 25 PER CENT. AND 50 PER CENT.; THEN MAY, 50 PER CENT. BOTH; JUNE, 75 PER CENT. BOTH; AND FROM AUGUST, 1917, ONWARDS 100 PER CENT. BOTH.

Shortage up to ..... IN SHILLINGS.

Conditions affecting Individual Cases	- 5	- 10	- 11	- 12	- 13	- 14	- 15	- 16	- 17	- 18	- 19	- 20	- 25	Total
Dead December 31st, 1918..	..	31	2	3	4	2	2	3	1	1	..	..	2	64
Living December 31st, 1918	..	35	4	2	4	4	3	2	1	3	..	4	13	125
Relief from Guardians	..	6	..	1	2	..	..	..	..	1	..	2	6	24
Assistance from £1,500	..	23	2	3	..	2	2	..	..	1	..	1	5	71
Assistance from £800	..	12	1	2	1	..	1	..	..	..	..	1	1	28



TABLE 6.  
TUBERCULOSIS OTHER THAN PULMONARY. FROM CASES VISITED AND REGISTERED DURING 1918.  
SHOWING SHORTAGE IN INCOME.

Conditions affecting Individual Cases	Under 5/-	5/-	10/-	11/-	12/-	13/-	14/-	15/-	16/-	17/-	18/-	19/-	20/-	Total
Dead December 31st, 1918.. .. .	14	4	..	..	1	..	2	..	..	..	..	1	..	22
Living December 31st, 1918 .. .. .	31	14	3	1	1	2	3	1	1	..	1	..	..	58
Relief from Guardians .. .. .	1	2	..	..	..	..	..	..	1	..	..	..	..	4
Assistance from £1,500 .. .. .	31	10	2	..	1	1	..	..	1	..	1	..	..	47
Assistance from £800 .. .. .	2	1	..	..	..	..	..	..	1	..	..	..	..	4

The total amounts expended during the year from the grants mentioned, viz., £1,500 contributed by the Corporation, £800 by the Insurance Committee, were for the year 1917.

The supervision of the Care Committee work is in the hands of Dr. Sutherland, as is now that appertaining to the £1,500 fund. Mr. Lock has, as usual, been unsparing of personal effort in the conduct of his work.

## THE SENIOR TUBERCULOSIS OFFICER'S REPORT.

BY DR. D. P. SUTHERLAND.

During the year 1918 the fall in the recorded death rate from Pulmonary Tuberculosis, noted during the past two years in Manchester, has continued. The incidence rate has also fallen, and the total number of cases notified is less than in the year immediately preceding. This applies both to new cases and re-notifications, and in the latter there is a greater proportionate reduction than in the former.

On account of the great shortage of medical men, and the increased pressure under which work had to be done, a certain diminution in the numbers diagnosed and notified might be anticipated, and possibly some cases would escape observation.

It remains to be seen if the death rate has possibly been modified by any unusual factor which may have obscured the true position.

The outstanding feature of 1918 was the recurrent wave of Influenza which took so heavy a toll of life during the year. It might be supposed that amongst the many hundreds of deaths from that disease, numbers of notified tuberculous cases would occur and be registered in the mortality rate for Influenza instead of Phthisis. Accordingly, all the deaths from Influenza have been carefully analysed.

COMPARATIVE TABLE SHOWING WEEKLY DEATHS FROM INFLUENZA AND TUBERCULOSIS DURING WAVES OF THE INFLUENZA EPIDEMIC, 1918.

Week ending	Influenza Deaths	Tuberculosis Deaths			Tuberculosis Deaths, 1917		
		All Forms		Pulmonary only	Pulmonary only	All Forms	
<i>1st Wave—</i>		Total					
		*	†				
29 6 18 .. ..	9	2	36	34	24	15	23
6 7 18 .. ..	71	9	37	28	18	20	24
13 7 18 .. ..	119	8	33	25	23	17	23
20 7 18 .. ..	84	2	25	23	19	27	36
27 7 18 .. ..	37	1	15	14	10	16	22
3 8 18 .. ..	9	1	25	24	24	17	20
10 8 18 .. ..	2	1	19	18	15	12	17
		24	190	166	133	124	165

\* Column showing notified Tuberculosis cases registered as "Deaths from Influenza."

† Column showing "Deaths registered from Tuberculosis." This is comparable with the 1917 column.

COMPARATIVE TABLE SHOWING WEEKLY DEATHS FROM INFLUENZA AND TUBERCULOSIS DURING WAVES OF THE INFLUENZA EPIDEMIC, 1918—  
*continued*

Week ending	Influenza Deaths	Tuberculosis Deaths			Tuberculosis Deaths, 1917		
		All Forms			Pulmonary only	All Forms	
<i>2nd Wave—</i>		Total					
26 10 18 .. ..	26	0	20	20	17	14	16
2 11 18 .. ..	81	7	23	16	13	9	9
9 11 18 .. ..	149	9	30	21	19	16	20
16 11 18 .. ..	220	9	33	24	20	16	23
23 11 18 ....	298	12	39	27	20	14	15
30 11 18 .. ..	384	8	51	43	39	13	20
7 12 18 .. ..	246	5	29	24	24	12	18
14 12 18 .. ..	108	3	18	15	14	9	15
21 12 18 .. ..	53	2	21	19	16	20	23
28 12 18 .. ..	41	2	19	17	13	17	20
		57	283	226	195	139	179

The total deaths from Tuberculosis each week are given alongside the Influenza deaths, and the comparable figures of Tuberculosis deaths in 1917 are given, when no wave of Influenza complicated matters.

The Tuberculosis deaths are seen to rise only in the second wave to any regular extent, but in neither epidemic do they follow closely the deaths from Influenza, as do deaths from Pneumonia and Bronchitis, nor is there anything like the same increase in death rate.

From Pneumonia and Bronchitis, respectively, the deaths rose to many times the number at the commencement of the waves, *e.g.*, in the July epidemic from 10 weekly to 60 weekly from Pneumonia and from 6 to 26 from Bronchitis, whilst in the winter epidemic the Pneumonia deaths jumped from 6 to 67 and the Bronchitis from 9 to 55 per week.

A further sub-division of the Tuberculosis deaths shows (if we separate the surgical from pulmonary cases) still less marked influence upon those due to Phthisis than we might have anticipated.

No conclusions can yet be drawn upon the influence this epidemic may have upon the future Tuberculosis incidence rate.

It is not possible either to estimate with any certainty the possible number of unknown cases of Tuberculosis there may have been amongst those deaths registered as due to Pneumonia and Bronchitis.

A few cases, and a few only, of acute rapidly spreading broncho-pneumonia occurred amongst the patients in Sanatorium and Hospital, and led to a fatal result. But, generally, the open-air regime, upon which this institutional treatment is based, was associated with mild and rapidly convalescing cases of Influenza when that disease developed.

The stage at which tuberculosis pulmonalis is being notified remains still somewhat advanced, but there is a definite improvement in the last two years, and it is gratifying to note the much longer life after notification that now exists as compared with former periods.

The diagnosis of early cases remains still one of the difficult problems of medicine, and nothing as yet can replace painstaking investigation of symptoms and close continuous study and observation of physical signs.

The reaction of the human body to infection by the tubercle bacillus varies with different individuals to an extent limited only by the number of persons so affected, and each case presents a problem in itself. Whilst investigations into the life history of the bacillus have been many and valuable, another line of research directed rather to the conditions governing resistance and recovery would appear to be desirable.

It is not every case which, given good physique, favourable environment, ample food, and absence of mental and bodily stress can resist or recover from an invasion by tubercle bacilli.

The factors which tend to determine arrest and quiescence of active mischief may to a limited extent be provided in the light of our present knowledge, but there remains a not inconsiderable mass of cases where, in spite of the favourable conditions obtaining, a steady retrogression takes place with its inevitable fatal termination. It is amongst these cases that the great problem of effective public health measures arises, and we are confronted at the outset with a question of moment. Are our efforts to be directed towards the elimination of the tubercle bacillus and is the ultimate goal to be a tubercle free population—or should we on the other hand proceed on lines calculated not directly to achieve that end, but rather to improve mankind's resisting powers until, in spite of the continued existence of the tubercle bacillus in the animal world, we can regard its invasion with complacency, secure in the knowledge that its manifestation will be rapidly terminated by our increased knowledge how to limit its destructive powers.

Socially organised as we are, and with the experience and knowledge so far available, most measures have been, and are at present, directed to the second of these alternatives. Health measures, largely based upon the infective nature of the complaint as a starting point, aim at diffusing and destroying so far as possible the invading germ, not with the hope of its entire destruction, but with the object of limiting its mass invasion and so diluting its virulent action. It is then hoped to secure a resistance not disproportionate to the dose of poison produced so that natural recuperative powers may work at their best and most effective level.

This brings us to the position of regarding the subject as one chiefly concerned with the presence of the bacillus in bulk, *i.e.*, the advanced case of disease. The unfortunate sufferer at this stage is the breeding ground of countless millions of the bacilli, and may be the unwitting source of a diffusion of innumerable organisms in a virulent form.

For his own sake and that of the community his potential capacity for disseminating disease should be checked. Accordingly, he is given advice directed to securing his assistance in all ways possible to help himself and prevent his disease from being a menace to his family and associates.

It cannot be doubted that the best way to secure this, in the majority of cases with which it falls to our lot to deal, is to place him in surroundings where his life may be so guided that he has the best chance of combating his peril. By removal from a probably unsatisfactory home, where crowding, atmospheric pollution, lack of sunshine and air, and detrimental work are perhaps all present, many benefits are secured.

He is placed under the open-air regime of the Sanatorium or Hospital, where he sees and is taught the elements of self-discipline, which are of the essence of the training. He is under the constant supervision of a staff of skilled, medical, and nursing attendants who can secure that any untoward symptoms are promptly noted, and met by measures which will combat a possible extension of disease. His resistance is improved by rest, good food, and the stimulating influence of sunlight and fresh air, and the germs which he is freely discharging are destroyed and diluted by the routine carried out, so that danger to others becomes well nigh negligible. With the best will in the world it is difficult to secure these advantages so long as the patient remains in his old surroundings, and in the vast majority of cases it is not only difficult but impossible.

Ample provision should therefore be made for the institutional care of these cases, and they should be encouraged to remain for as long as the condition calling for this form of treatment exists.

It is this difficulty of prolonged treatment which is constantly before us, but it must be faced until such time comes, if ever, when it will be possible to secure these requirements in the homes of the people.

And it is for this reason that one feels the necessity of setting up the necessary Colonies for patients with advanced disease who will never be suitable subjects for competitive life in ordinary industry. These patients are able in very many instances to continue for many years at useful productive work given surroundings and control such as have been described, and from every standpoint, the economical not excepted, a serious trial is called for of carefully-directed Colony Schemes for the infective tuberculous patients.

The recent Colony Schemes, making provision for non-infective patients capable of a day's full work, whilst useful as demonstrating what is not unknown as to the possibility of recovery of tuberculous cases, do not help in the more serious necessity that exists.

With every industry crippled, the country in a state of extreme debt and productive power more urgently needed than ever before in the history of the kingdom, it behoves us to limit by all means in our power the enormous drain in health and wealth which tuberculous disease involves.

So far for the present day workers.

The race of the future is not less important, and child welfare must take note of the totally inadequate provision made for dealing with the tuberculous children of the present. Associated with improved homes and pure food must be the provision also of adequate treatment facilities for those cases of tubercle that afford the most brilliant results under Sanatorium care. The recovery rate for children, already high, can be enormously improved by more generous institutional provision.

Country and open-air schools, convalescent homes, and sanatoria proper are all urgently needed, and the manufacture of cripples, probably 50 per cent. of which are caused by surgical tuberculosis, can be materially reduced. The good results of prolonged sanatorium care for surgical cases of this disease are an established fact, and we should do well to secure that every remediable case be treated in the way that experience has shown will terminate the disease and procure a lessening of the deformities which we see amongst the present day population.

The measures continued in Manchester for the control and supervision of Tuberculosis differ in no material way from what has been described in former reports.

It is our endeavour to keep in close and continuous touch with every notified tuberculous case in the area. By means of the periodical visiting of the homes by the Tuberculosis Nurses and Inspectors, the Tuberculosis Office is kept informed of the home conditions, income, work, and general surroundings of the case. The medical practitioners' domiciliary reports, which it is a pleasure to state have been continued with regularity through a most difficult period of overwork and strain, give valuable information on the clinical side, and the periodical reports from the various Sanatoria and Hospitals complete the links necessary for the central organisation to keep in the necessary touch with all cases.

All this "Care" work is briefly summarised in the Tables appended, and it only remains to add that the funds granted from the Care Committee and insurance moneys have again been used to their full extent with definite benefit. By their means, cases and families have been enabled to have provided for them necessary additions to their dietary—nursing appliances are obtained—beds and bedding have been made available for better isolation in the homes, and general decencies of life have been made possible that otherwise could not have been secured.

A further number of quiescent and arrested cases have been put in the way of obtaining better and more suitable work, and in some instances it has been possible to obtain work for them under one or other of the Corporation Committees.

Increasing attention to the institutional requirements of discharged service men and women, who have contracted Tuberculosis as a consequence of their war work, has been given by the Ministry of Pensions. Provision now exists for the more rapid and complete reference of these cases from the Military Authority to the Tuberculosis Officer, and provision for their admission to Sanatoria can be made without undue delay. There is also additional provision made for the following up and home visiting of discharged soldiers on lines already operative under the Manchester scheme.

In both of these cases the regulations require distinct and separate registration of each patient on account of the financial adjustments involved.

This naturally increases the office work to a considerable extent, and complicates the statistical records which have necessarily to be kept for cases in institution or outside.

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The following pages give a summary of the work.

Insured cases applying for treatment :—

1914 ..	{	730 Males.
		321 Females.
1915 ..	{	572 Males.
		315 Females.
1916 ..	{	747 Males.
		316 Females.
1917 ..	{	728 Males.
		359 Females.
1918 ..	{	642 Males.
		261 Females.

Cases of discharged soldiers referred by the Insurance Commissioners for treatment—262.

Number of insured patients who had so far recovered that no active signs of disease were found—199.

Recoveries amongst uninsured cases—223.

Contacts examined at their homes and at the Dispensary—366; of these, definite signs of Tuberculosis were found in 20, and in 50 further observation was required, as they were suspicious cases of Tuberculosis.

Grants of food were made in 2,197 instances to 534 families, and 169 grants of clothing were supplied to 102 patients in Hospital and Sanatorium to enable them to derive full benefit from treatment.

Bedding, bedsteads, and cots, together with nursing appliances, have also been loaned in necessitous cases to secure isolation and adequate nursing at home.

Special visits to the number of 5,563 have been paid by the Tuberculosis Nurses and 1,798 visits by the Clinical Nurse who attends to domiciliary patients requiring surgical dressings and nursing care.



TABLE A.

SUMMARY OF PRIMARY EXAMINATIONS MADE BY THE SENIOR TUBERCULOSIS OFFICER AND ASSISTANT TUBERCULOSIS OFFICER IN 1918.

	Reason for Examination				Occupational Condition at Examination		Diagnosis										Recommendations made											
	Treatment	Claimed Recovery	Diagnosis	Contacts	Working (or at School)	Not Working	Pulmonary Tuberculosis			Tuberculosis of							Delamere and Abergele	Baguley	Hardman Street Dispensary	Union	Other Hospitals	Private Practitioners	Observation					
							Stage I.	Stage II.	Stage III.	Larynx	Bones and Joints	Glands	Abdomen	Other Organs	Doubtful Tuberculosis	Bronchitis								Heart Lesions	Other Diseases	No evidence of Tuberculosis	Recovery	No Disease
Males ..	57	4	161	15	148	89	42	26	37	4	8	6	1	7	29	52	20	41	49	2	70	45	6	3	14	55	21	
Females	43	5	77	37	89	73	17	19	35	2	4	15	2	2	13	17	4	26	39	3	35	52	3	1	10	25	14	
Children	24	24	42	88	101	77	12	7	18	0	10	11	6	3	14	37	14	32	85	14	80	12	19	7	21	15	4	
Totals ..																												
	577						577						* 766										577					

\* Total of "diseases" as distinct from total cases examined, i.e., several patients had more than one form of disease present.

TABLE B.—RESULT OF EXAMINATION OF CASES SENT FOR DIAGNOSIS, 1918.

	Pulmonary Tuberculosis			Tuberculosis of						No evidence of Tuberculosis	Bronchitis	Heart Lesions	Other Diseases
	Stage I.	Stage II.	Stage III.	Larynx	Bones and Joints	Glands	Abdomen	Other Organs	Doubtful Tuberculosis				
Males . . .	33	18	17	2	2	3	0	3	24	54	38	13	24
Females ..	12	12	13	2	4	4	1	1	12	17	10	2	11
Children ..	3	2	6	0	2	7	2	0	6	13	14	3	5

TABLE C.—RESULT OF EXAMINATION OF CONTACTS.

Males . . .	0	1	0	0	0	0	0	0	2	12	2	1	6
Females ..	3	2	0	0	0	1	0	1	2	29	2	1	11
Children ..	5	2	1	0	0	4	0	1	4	72	19	5	25

TABLE D.—DISPENSARY RETURN, 1918.

Diagnosed as suffering from Tuberculosis	Number of persons, including Contacts, who were examined for the first time during the period from January 1st to December 31st, 1918, at or in connection with the Dispensary or Visiting Station, and were		Number of persons diagnosed to be suffering from Tuberculosis who were treated or supervised at or in connection with the Dispensary or Visiting Station during the period from January 1st to December 31st, 1918		Number of persons who were under treatment, supervision, or observation at or in connection with the Dispensary or Visiting Station on December 31st, 1918			
	Diagnosed as <i>not</i> suffering from Tuberculosis	Undiagnosed and remaining under observation	Total number examined		Insured	Uninsured		
			Insured	Uninsured				
1115	771	239	822	1303	266	715	88	396

TABLE E.—INSURED CASES TREATED IN 1918.

Residential . . . . .	1,218
Dispensary . . . . .	266
Domiciliary . . . . .	2,174
<hr/>	
Total . . . . .	3,658
<hr/>	

## ANALYSIS OF CASES TREATED.

TABLE I.—Residential (Insured).

	Total cases treated	Discharged from Institutions		Died	* Residential treatment discontinued in other cases	Still under Residential treatment on 1st January, 1919
		Improved	Without Improvement			
	(1)	(2)	(3)	(4)	(5)	(6)
Men . . . . .	865	405	151	67	26	216
Women . . . . .	353	157	62	37	6	91
Totals . . . . .	1218	562	213	104	32	307

\* The figures in column (5) relate to cases as to the progress of which no definite report is available for various reasons—*e.g.*, the withdrawal from the Institution of the insured persons themselves before the expiration of the period for which they were nominated for the treatment.

TABLE II.—Residential (Uninsured).

	Total cases treated	Discharged from Institutions		Died	* Residential treatment discontinued in other cases	Still under Residential treatment on 1st January, 1919
		Improved	Without Improvement			
	(1)	(2)	(3)	(4)	(5)	(6)
Men . . . . .	86	38	13	18	3	14
Women . . . . .	155	64	30	35	2	24
Children (under 16)	29	6	1	...	...	22
Totals . . . . .	270	108	44	53	5	60

\* The figures in column (5) relate to cases of which no definite report is available for various reasons—*e.g.*, the withdrawal from the Institution of the persons themselves before the expiration of the period for which they were nominated for the treatment.

TABLE III.—*Dispensary (Insured).*

	Total cases treated	Discharged from Institutions		Died	* Residential treatment discontinued in other cases	Still under Residential treatment on 1st January, 1919
		Improved	Without Improvement			
	(1)	(2)	(3)	(4)	(5)	(6)
Men .. ..	173	76	42	10	..	45
Women .. ..	93	29	12	9	..	43
Totals.. ..	266	105	54	19	..	88 + 93 outstanding cases

\* The figures in column (5) relate to cases as to the progress of which no definite report is available for various reasons—*e.g.*, the withdrawal from the Institution of the insured persons themselves before the expiration of the period for which they were nominated for the treatment.

In addition to the above figures—

399 Males

148 Females—completed two weeks' Dispensary observation and treatment on leaving Institutions. Their condition was

stationary during this period.

Total 547

TABLE IV.—*Dispensary (Uninsured).*

	Total cases treated	Discharged from Institutions		Died	Still under Residential treatment on 1st January, 1919
		Improved	Without Improvement		
	(1)	(2)	(3)	(4)	(5)
Men ... ..	105	19	42	...	44
Women ... ..	260	36	71	...	153
Children (under 16)... ..	350	116	35	...	199
Totals ... ..	715	171	148	...	396

D. P. SUTHERLAND.

## MILK AND TUBERCULOSIS.

REPORT ON THE PROCEDURES CARRIED OUT UNDER THE MODEL MILK CLAUSES,  
PREPARED UNDER THE SUPERVISION OF DR. W. A. YOUNG, FOR THE MEDICAL  
OFFICER OF HEALTH.

During the year 1918 we have still been without the services of our regular Veterinary Surgeon, Lieutenant-Colonel Brittlebank, C.M.G., M.R.C.V.S., D.V.S.M. The work of following up positive station samples of tuberculous milk and the examination of cows within the City has been done partly by Mr. J. F. Dixon, M.R.C.V.S., who was loaned by the Markets Committee to the Hospitals Sub-Committee one day each week for a portion of the year. Pressure of work under the various Meat Rationing Orders prevented the fulfilment of this arrangement. For the latter portion of the year, Mr. J. B. Wolstenholme, F.R.C.V.S., has acted as Veterinary Officer, and much valuable work has been accomplished in the limited time at disposal.

### THE MANCHESTER MILK CLAUSES.

The Manchester Milk Clauses have been operated as in former years, so far as the obtaining of milk samples has been concerned and the following up of positive station samples. The change in dealing with the cows found to have positive tuberculous lesions in the udder reported last year, which was brought about by the operation of the Cattle Sales Order of December 17th, 1917, has been found to work fairly satisfactorily. Advantage has been taken under the order of the provisions for emergency slaughter in many cases. Where this course has been adopted the affected animal has been slaughtered on the farm, or at some slaughter-house in the neighbourhood of the farm, under the supervision of the local authorities concerned. In several cases the carcasses have been so extensively affected as to render the whole unfit for food. These have been destroyed. In other instances the farmers have chosen to send the affected animal to the local auction market to be graded. It has not been possible to trace these animals through the auction to their ultimate destination. Seeing that all cattle are now allotted from the auction to some Butchers' Association, acting under the Local Food Control Committees, it is most probable that the carcasses receive due inspection in the towns to which they are consigned, but it is not possible either from Manchester or through the Local Authorities to have the cows inspected by a Veterinary Surgeon at slaughter.

In a number of cases the farmers have informed the Grading Officer of the condition of the animal beforehand, so that the cow has been graded according to its known condition. Steps have then been taken to have the cow slaughtered locally, under the supervision of the Authorities. The farmer, under these circumstances, only receives the maximum value of such portions of the carcase as are passed as fit for human consumption. Our efforts in dealing with tuberculous animals have been steadily maintained throughout the year. The Medical Officer of Health for the County and the Medical Officer of Health of the District concerned have been kept well informed of each succeeding step, so that the affected animal is kept under observation from its discovery until its death.

#### TUBERCULOUS MILK, 1918.

During the year 450 samples of milk have been obtained in connection with Tuberculosis, collected as follows:—

By the Food and Drugs Inspectors from Railway Stations ..	283
By the Food and Drugs Inspectors from Carts and City Dairies..	30
By the Veterinary Surgeon and Special Inspectors (individual samples)	79
By the Veterinary Surgeon and Special Inspectors (mixed samples)	58
Total .. .. .	<u>450</u>

The number of farms represented in this total is .. .. . 288

Samples from 18 of these farms were found to cause Tuberculosis in the experimental animal = 6·25%

Of the 288 farmers—

38 reside in the City and one of them sent tuberculous milk	2·63%
159 reside in Cheshire and 13 of them sent tuberculous milk	8·17%
39 reside in Derbyshire and 2 of them sent tuberculous milk	5·12%
28 reside in Lancashire and 1 of them sent tuberculous milk	3·57%
24 reside in Staffordshire and 1 of them sent tuberculous milk	4·16%

From particulars supplied by the 288 farmers, 215 of whom replied to our queries, we find that on these farms there were 4,354 cows, or an average of 20·25 cows per farm.

TABLE I.

YEAR	Number of farmers' milk tested during the year	Total number found to cause Tuberculosis in the experimental animal	Percentage of farmers sending Tuberculous milk	Percentage of farmers from EACH COUNTY whose milk was found to cause Tuberculosis						
				Cheshire	Derbyshire	Staffordshire	Shropshire	Lancashire	Yorkshire	Manchester
1901	272	27	9'90	10'46	9'23	8'00	10'00	...	...	...
1902	345	36	10'40	12'72	8'65	4'01	...	8'31	...	...
1903	329	45	13'60	14'76	9'58	15'15	40'00	...	...	...
1904	318	29	9'10	11'17	6'02	...	...	7'14	25'00	...
1905	565	47	8'30	10'26	6'00	6'38	...	2'98	12'50	...
1906	542	42	7'70	8'60	6'50	9'30	12'50	4'00	...	...
1907	562	38	6'76	7'71	4'48	6'94	12'50	3'70	...	...
1908	289	27	9'34	11'56	6'25	7'70	...	2'94	12'50	...
1909	535	31	5'79	4'80	7'47	8'57	11'11	3'33	...	...
1910	468	30	6'41	6'20	8'69	5'55	...	...	...	...
1911	494	51	10'32	11'11	2'50	12'12	10'00	12'20	50'00	...
1912	484	54	11'15	12'94	4'00	10'20	33'33	6'00	10'00	...
1913	486	60	12'51	13'99	11'58	9'26	33'33	5'88	20'00	...
1914	352	34	9'66	12'39	8'19	...	...	2'77	...	...
1915	69	9	13'04	16'21	...	...	...	13'63	...	...
1916	321	38	11'83	11'59	8'80	13'04	...	6'97	...	...
1917	365	37	10'13	13'54	9'3	4'3	...	11'7	...	11'4
1918	288	18	6'25	8'17	5'12	4'16	...	3'57	...	2'63
Total..	7084	653	9'21	—	—	—	—	—	—	—

The usual table showing the percentage of farmers found sending tuberculous milk from 1901 onwards is inserted, being completed to the end of the year 1918.



The following table of samples submitted in connection with the Manchester Milk Clauses summarises the work of the year :—

TABLE II. 1918.

Number of specimens of mixed milk taken at the station	313	
Number of specimens of mixed milk taken from city farms	42	
Number of specimens of mixed milk elsewhere (for administrative purposes)	30	
Number of each found to contain tuberculous infection	Station 13 Elsewhere 4	In addition, 25 control samples were taken at the stations and elsewhere, 3 of which were proved capable of causing Tuberculosis.
Number of farms visited in consequence	19	Of these, 2 belonged to the year 1917.
Number of specimens taken from individual cows as the result of following up station and other samples	61	In addition, 16 mixed samples were taken from groups of animals.
Number of milks from individual cows proved to be tuberculous out of those given in the preceding column	17	
Number of udders proved to contain tuberculous lesions	17	
Number of milks taken from individual cows as the result of <i>notification</i> or otherwise than owing to the presence of tubercle bacilli in mixed milk	18	Individual samples. This relates to City Farms.
Number of udders in last column shown to be tuberculous by bacteriological examination	1	This relates to City Farms.
Total number of specimens submitted for examination	450	283 mixed samples—primary. 25 " " —controls. 79 individual cows. 58 mixed samples direct from Farms.

Reference to the table number I. shows that the percentage of farmers whose milk was examined and who were found to be sending tuberculous milk was 6.25 per cent. It will be seen that this is the lowest point reached, except in the year 1909. This is all the more satisfactory when the difficulties as to food for cattle are taken into consideration. The country farmer, no less than the City farmer, was greatly hampered in 1918 by the great shortage of feeding stuffs for cattle. They had to rely very largely on their own resources for whatever corn was fed to the cattle. Many farmers have again experienced a shortage of hay. Straw had to be fed to cattle in considerable quantities.

Visits were paid to 19 country farms from which tuberculous milk was being sent into the City. The herds on these farms numbered 532. 11 farms were revisited owing to the control samples proving tuberculous, or to supervise the slaughter of tuberculous cows, whilst one farm was visited three times before the animals concerned were discovered. 16 cows were proved to have tuberculous lesions in their udders. All of these were slaughtered.

On three farms there were two tuberculous cows on each, whilst on several farms the offending cow or cows had been disposed of prior to our visit. Station control samples of milk were obtained in every instance following the result of the examination of the individual samples of milk, negative results being obtained in all cases.

#### MANCHESTER FARMS.

The number of farms within the City which are occupied as Dairy Farms is 92, whilst the number of cows kept is 1,329. The following summary shows the disposition of cows in the various districts of the City:—

Sanitary District Number	Sanitary District	Cowkeepers	Cows
5	Cheetham .. .. .	3	42
19	Crumpsall .. .. .	6	82
20	Blackley .. .. .	20	270
21	Moston .. .. .	11	178
23	Newton Heath .. .. .	4	40
32	Gorton .. .. .	4	23
16	Hulme .. .. .	1	6
27	West Gorton and Gorton .. .. .	2	33
28	Rusholme and Fallowfield .. .. .	6	107
30	Levenshulme .. .. .	5	89
33	Didsbury .. .. .	17	259
34	Withington and Chorlton-cum-Hardy	13	200
		92	1329

42 City farms and their herds were inspected during the year by Mr. J. F. Dixon, M.R.C.V.S., and Inspector Higginbotham, or by Inspectors Higginbotham and Priestley. The herds on these farms numbered 762. Individual samples were obtained from 18 cows, one of which gave a positive result. This cow was slaughtered at the Manchester Abattoirs, certain portions of the carcass being passed as fit for human consumption. 42 mixed samples were obtained, all of which gave negative results. It was not found possible to visit the whole of the farms owing to the shortage of staff and the pressure of other urgent work.

The general condition of the cows which were examined was distinctly good, considering the shortage of many feeding stuffs previously thought to be almost indispensable.

Brewers' grains, indian meal, and feeding cakes of all kinds were very scarce indeed; it may almost be said that the first half of the year was the worst experienced during the war period. Hay, home-grown oats damaged by weather, and roots have formed the principal foods. The milk yield is said by some farmers to have been less than usual owing to food difficulties.

The cows do not appear to have suffered as the result of the impoverished ration.

The general cleanliness of cowsheds and cows, except at a few farms where the farmers take a great interest in their stock, leaves much to be desired. Labour shortage was the principal excuse put forward for the unsatisfactory conditions.

Advantage, however, was not generally taken of the services of girls of the Land Army. Tributes to their work were paid in one or two instances.

#### DAIRY UTENSILS AND STERILISATION.

Many cases of unsatisfactory dairy utensils have been reported during the year, both as regards cleanliness and unsuitability of the metals in use. A practice of using ordinary galvanised buckets has grown up that cannot be too strongly condemned. The zinc used in the process of galvanising leaves a rough surface to which the milk solids adhere in ever-increasing quantity until a distinct yellow coating covers the interior of the bucket. This coating defies the usual methods adopted by farmers for cleansing their tinned-ware vessels. In two instances prosecutions were undertaken against farmers who had been previously warned. A fine was imposed in one instance. In the other a severe warning was administered by the presiding magistrate. A general improvement is to be expected in the coming year,

## STERILISATION OF MILK UTENSILS.

The attention of farmers has been directed, both by letter and personal instruction, to the urgent need of sterilising all utensils used in the dairy trade. Towards this end, a sterilising plant designed by Professor Delépine has been installed in the Civic Buildings, where demonstrations can be given. A considerable number of farmers have attended, but the response has not been such as might have been expected.

## OUTBREAK OF ANTHRAX.

During the year two individual cases of Anthrax have occurred on farms within the City, situate about three miles from each other. In both instances the Board of Agriculture certified the disease.

Farm A. Cow died on April 8th, 1918, after a period of a few days during which it had been slightly unwell, though nothing apparently serious. The cow had been on the farm since July, 1917, and was considered to be a very healthy beast. No new cows had been brought on to the farm for over a month previous to the death. No other sickness was noticed amongst the herd of 30 cows prior or subsequent to the death.

Farm B. Cow died on August 14th, 1918. On the previous day it was noticed that the animal was "blown," a condition usually associated with over-eating clover. It refused food and gave no milk. The cow had been on the farm from the previous January, and had been a very good milker. Its condition in consequence was only poor. The last new cows were brought on to the farm over one month previously. No other sickness was noticed amongst the herd of 13 cows prior or subsequent to the death.

So far as could be ascertained, there had not been any cases of Anthrax within or adjoining the district, though there were other cases of Anthrax reported about this time in Cheshire, about 20 miles distant.

Very careful enquiries in each case concerning the possibility of infection having been conveyed by a cattle dealer or person employed at a neighbouring tannery, suspicious illness amongst the members of the farmers' families, the introduction of articles containing hair, or brushes, were made without result.

Both farmers purchased feeding stuffs from several corn millers, one as far distant as 8 miles. There was one miller, however, common to both. Enquiries were directed into the kind and character of the feeding stuffs. Samples were obtained in the latter case and tested by Professor Delépine without result. The corn miller common to both was interviewed. The manager of the works raised the question of infection being conveyed by means of infected bags. Speaking generally, millers never expect to receive their own bags back again.

Bags are indiscriminately purchased wherever they are on offer. Their previous contents are unknown to the miller on purchasing. The bags are not treated in any way whatever before being filled with cattle feeding stuffs and despatched to the farmers.

An examination of the empty sacks found at Farm B revealed in several cases their primary origin. A list is submitted below, from which it will be seen how it is possible by means of these bags to convey from place to place, or from country to country, any of the diseases common to farm animals. During times of epidemics such as Swine Fever, Foot and Mouth Disease, Anthrax, etc., the Board of Agriculture and Fisheries restrict the movement of cattle from place to place under severe penalties. The corn miller, however, with his sacks purchased indiscriminately, and soiled with filth from the floors of cowsheds or piggeries, passes from farm to farm unhindered and unchecked. It was also stated that the sacks were thrown over cows for protection. The time has arrived, having regard to the high cost of animals and the necessity of saving food, when millers should be compelled to provide clean sterilised wholesome sacks in which to deliver their feeding stuffs. The following markings were on the miller's corn bags on Farm B.

Sack No. 1 markings—

Tuzelli Graanfluer O.O.O. 12245

Cyantieur Port St. Louis du Rhone.

Sack No. 2—Four red lines down centre on each side of sack. No other indication.

Sack No. 3—Frost, Chester.

Sack No. 4—Three blue lines down centre each side. No other indication.

Sack No. 5—Quaker Golden Maise. Quaker Oat Coy. Chicago, U.S.A.

Sack No. 6—Black mark across sack. No other indication.

Sack No. 7—L. & S., Ardwick.

Sack No. 8—J. K. & W. Hesketh, Wincham Mills.

Sacks Nos. 9 to 14—No marks of any kind.

The miller states that this is the general run of bags they fill with feeding stuffs. They obtain them anywhere, fill them with feeding stuffs, and send them anywhere. This is said to be the general practice of millers throughout the country.

## DAIRIES, MILKSHOPS, AND ICE CREAM DEPOTS.

## INSPECTION OF MILKSHOPS.

The work of inspection has been carried out by Inspectors Greenup, Sayle, and Heslop.

During 1918, general improvement in the cleanliness of the "Milkshops" within the City has been observed, and closer attention to the covering of the milk has been carried out by the retailers.

As the result of more regular inspections and a systematic examination of all milkshops, many defects have received attention.

The small retail milkshops—the most prevalent type in the City—are in a great many instances unsuitable for the storage and sale of milk, but as they are mostly old-established businesses, where milk is sold as a side line, they are difficult to deal with.

The stocking of these small shops with such commodities as groceries, provisions, hardware, tobacco, drapery, smallwares, hosiery, sweets, and so forth, tends to make them unsuitable for the storage and sale of milk.

The sale of milk should be permitted only from premises which have been specially adapted for the purpose, and where the other articles for sale are truly compatible with the sale of milk, *e.g.*, dairy produce, tinned, bottled, or packet goods, and mineral waters. In such a shop, milk is not a side line and of secondary consideration.

Some of the premises occupied by dairymen carrying on extensive businesses involving the storage of large quantities of milk have been brought more up to date, and other similar premises are being dealt with.

The following table shows the work done during 1918:—

Number on Register	.. .. .	2,441
Number of Inspections	.. .. .	5,616
Number Unregistered	.. .. .	111
Number of Applications for Registration	.. .. .	209
Number found without Indicator over door	.. .. .	151
Number of Dirty Premises	.. .. .	143
Number of Premises in disrepair	.. .. .	15
Number of Shops with Vessels uncovered	.. .. .	85
Number of Summonses issued	.. .. .	4
Number of Prosecutions	.. .. .	3
Number of Summonses withdrawn	.. .. .	1

### MILK PRICES ORDERS UNDER THE DEFENCE OF THE REALM REGULATIONS.

During the year, the Milk Inspectors have carried out the provisions of the various Milk Prices Orders, under the Defence of the Realm Regulations, which were justified by the fact of many prosecutions for exceeding the official prices laid down by the Food Control Committee.

Number of Samples taken .. .. .	1,645
Number of Summonses issued .. .. .	40
Number of Prosecutions.. .. .	37
Number of Summonses withdrawn .. .. .	3

### INSPECTION OF ICE-CREAM DEPÔTS.

The making of Ice-Cream being forbidden by the Food Controller, owing to the shortage of sugar and milk, permission was given in May to allow the manufacture of Water Ices, substitutes for sweetening being used. During inspection it was found that only a small percentage of makers took advantage of this concession.

Number on Register .. .. .	488
Number of Inspections .. .. .	631
Number of Dirty Premises .. .. .	6
Number of Vessels uncovered .. .. .	13
Defective Ashbin .. .. .	1

### MUNICIPALISATION OF THE MILK SUPPLY.

The report prepared by Professor Delépine on the condition of the supply of milk to the City of Manchester aroused general concern, which was intensified by the difficulties experienced in 1917 and 1918 in obtaining an adequate amount, and on July 25th, 1918, the Local Food Control Committee passed the following resolution.—“That with a view to securing and safeguarding a satisfactory milk supply, the Sanitary Committee be approached and asked to prepare a scheme providing for the wholesale and retail distribution of milk by the Manchester Corporation.” Mr. Alderman Jackson was present and willingly undertook to recommend the Sanitary Committee to enquire, and, if possible, to prepare a scheme. The above resolution was

brought before the Sanitary Committee on July 31st, 1918, and the following resolutions were passed :—

SANITARY SPECIAL SUB-COMMITTEE *re* DISTRIBUTION OF MILK BY THE CORPORATION.

August 19th, 1918.

PRESENT :—Alderman Jackson, in the Chair.  
Councillors Godbert, Pierce, Simon, Walker.  
The Deputy Town Clerk and the Medical Officer of Health also attended.

*Memorandum.*

Read following proceedings of the Sanitary Committee of the 31st July, appointing this Sub-Committee :—

*Re* SCHEME FOR THE WHOLESALE AND RETAIL DISTRIBUTION OF MILK BY THE CORPORATION.

*Memorandum.*

Read following resolution of the Local Food Control Committee of the 25th inst. :—

At a meeting of the Local Food Control Committee of the Council held the 25th day of July, 1918.

*Milk Supply.*

*Resolved,—*

That with a view to securing and safeguarding a satisfactory milk supply, the Sanitary Committee be approached and asked to prepare a scheme providing for the wholesale and retail distribution of milk by the Manchester Corporation.

(A true extract.)

The Sanitary Committee.

THOMAS HUDSON,  
*Town Clerk.*

*Resolved,—*

That the Chairman, Deputy-Chairman, Councillors Margaret Ashton, Godbert, McLaehlan, Marr, Pendlebury, Pierce, Simon, and Walker be appointed a Sub-Committee to consider and report upon the advisability or otherwise of establishing a scheme for the wholesale and retail distribution of milk by the Manchester Corporation.

*Memorandum.*

The Deputy Town Clerk explained the legal position and the steps that would have to be taken in the event of the Corporation deciding to apply to Parliament for powers to establish a scheme for the distribution of milk and undertook to prepare, for the information of the Sub-Committee, a statement on the subject.

*Resolved,—*

That the Medical Officer of Health be instructed to prepare a report showing the present condition of the milk supply in the City and its bearing upon the health of the inhabitants, and also on the effect of an impure and adulterated supply of milk on the health of the people.

*Resolved,—*

That under the direction of the Chairman and the Medical Officer of Health, Mr. South be instructed to obtain particulars and to prepare a financial statement showing the amount of capital employed in the various businesses dealing in milk in the City.

*Resolved,—*

That the meetings of this Sub-Committee be held at the call of the Chairman.



The Deputy Town Clerk accordingly made a report on the steps which would have to be taken, and the conditions which must obtain, if a municipal milk supply were established for Manchester. The Medical Officer of Health also presented a report on the lines indicated by the Committee. Mr. South prepared a statement showing the cost of working an average milk round in Manchester in 1917, and detailing arrangements made for several gentlemen to attend before the Special Sub-Committee to give their views and evidence on various aspects of the question. Interviews were held during 1918 with Mr. Rotherham, Mr. Stafford, Mr. Young, and Mr. Kirkland, the three last-named being representatives of Co-operative Societies. All three were decidedly favourable to the municipalisation of the milk supply. These interviews were continued into the year 1919, in which year, also, the Sub-Committee visited Bury on April 11th and Sheffield on July 7th to examine into the measures of municipalisation taken in those County Boroughs. On August 20th, the Chairman, Mr. Alderman Jackson, Mr. Councillor O'Loughlin, and Mr. Councillor Pierce, with Mr. South, interviewed, in London, the Managing Director of the United Dairies Company and obtained further information. A questionnaire was prepared by Mr. South and submitted to the Manchester and Salford Milk Dealers Association, and written replies were given. An interview also took place between the Special Sub-Committee and members of the Association on March 6th, 1919. Of all the interviews in Manchester, shorthand notes were taken by Mr. Warrington, while Mr. South presented accounts of the facts ascertained on the visits named.

Mr. South also presented an estimate of the cost of taking over the milk businesses in Manchester, which was modified after consultation between the Chairman and Colonel Brittlebank.

The investigations of the Committee are now completed, and a report has been prepared by the Chairman (Alderman Jackson) summarising the proceedings of the Sub-Committee, showing the evidence obtained, the views put forward and the conclusions arrived at, which will no doubt be published.

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TABULAR STATEMENT SHOWING SPECIAL WORK DONE BY  
INSPECTOR HIGGINBOTHAM DURING 1918.

Food Contractors to H.M. Forces	Inspections	Visits with L.G.B. Inspector	Interviews with M.O.H. re same	Specifications issued	Specification carried out			
182	807	30	28	6	6			
	Inspections and Re-inspections	Cows Examined by Mr. Wolstenholme and otherwise	Sampls obtained	Positive Results	Interviews with M.O.H.	Interviews with Vet. Surgeon	Visits to Joddrell Street	Visits to York Place
Country Farms...	28	532	79	17	58	28	37	10
City Farms .....	42	762	60	1	54	4	16	8
	Investigations	Families affected	Persons affected	Samples of Flour tested	+ Results	Interviews with M.O.H.	Interviews with L.G.B. Inspector	York Place
Antimony Poisoning in Self-Raising Flour..	45	16	100	407	29	18	3	1
	Investigations	Interviews with M.O.H. re same	Picture Houses at which Film was shown	Visits in connection therewith	Interviews with M.O.H. re same			
Influenza outbreak Film "Dr. Wise"...	13	4	18	21	5			
	Interviews with M.O.H.	Interviews with Prof. Delépine	Interviews with Tinsmit					
Production of Milk Utensil Steriliser by Professor Delépine .....	15	10	15					
	Inspections and Reports	M.O.H. re same	Nuisances	M.O.H. re same	Piggery Reports	M.O.H.		
Miscellaneous .....	216	53	11	6	46	23		

TABULAR STATEMENT SHOWING SPECIAL WORK DONE BY  
INSPECTOR HIGGINBOTHAM DURING 1918—*continued.*

	Enteric	Enquiries	Scarlet Fever	Diarrhoea	Bowel trouble in Children	Interview with M.O.H.
Infectious Diseases	1	7	2	14	8	4

Inspection of Schools—3; M.O.H. re same—3.

Inspection of Stables—5; M.O.H. re same—3.

	From Babies' Hospital	From Child Welfare Centres	From Hulme Day Nurseries	From Schools
Milk Samples ...	4	10	6	1

Inspection of Dairies—17; M.O.H. re same—4; Police Court Proceedings—2.

Annual Report of the Medical Officer of Health for the year  
1918, for the County Borough of Manchester, on the adminis-  
tration of the Factory and Workshop Act, 1901, in connection  
with

FACTORIES, WORKSHOPS, WORKPLACES, AND HOMEWORK.

I.—INSPECTION OF FACTORIES, WORKSHOPS, AND WORKPLACES.

*Including Inspections made by Sanitary Inspectors or Inspectors of Nuisances.*

Premises	Number of		
	Inspections	Written Notices	Prosecutions
Factories (including Factory Laundries)... ..			
Workshops (including Workshop Laundries)... ..	10069	51	...
Workplaces (other than Outworkers' premises included in Part 3 of this Report) ... ..			
Total ... ..	10069	51	...

## 2.—DEFECTS FOUND IN FACTORIES, WORKSHOPS, AND WORKPLACES.

Particulars	Number of Defects			No. of Prosecutions
	Found	Remedied	Referred to H.M. Inspector	
<i>Nuisances under the Public Health Acts :—*</i>				
Want of cleanliness ... ..	266	266	...	...
Want of ventilation ... ..	1	1	...	...
Overcrowding ... ..	...	...	...	...
Want of drainage of floors ... ..	...	...	...	...
Other nuisances ... ..	86	80	...	...
Sanitary accommodation—				
Insufficient ... ..	19	6	...	...
Unsuitable or defective... ..	99	84	...	...
Not separate for sexes ... ..	5	4	...	...
<i>Offences under the Factory and Workshop Act :—</i>				
Illegal occupation of underground bakehouse (S. 101) ... ..	...	...	...	...
Breach of special sanitary requirements for bakehouses (SS. 97 to 100) ...	158	158	...	...
Other offences (excluding offences relating to outwork which are included in Part 3 of this Report)	151	145	...	...
Means of escape in case of fire (insufficient) ... ..	16	3	...	...
<b>Total</b> ... ..	<b>801</b>	<b>747</b>	...	...

\* Including those specified in sections 2, 3, 7, and 8 of the Factory and Workshop Act as remediable under the Public Health Acts.

## 4.—REGISTERED WORKSHOPS.

Workshops on the Register (S. 131) at the end of the year		Number
Important classes of workshops, such as workshop bakehouses, may be enumerated here.	Workshops ... ..	3564
	Bakehouses ... ..	633
	<b>Total number of Workshops on Register</b> ...	<b>4197</b>

## 5.—OTHER MATTERS.

Class	Number
Matters notified to H. M. Inspector of Factories :—	
Failure to affix Abstract of the Factory and Workshop Act (S. 133) ... ..	109
Action taken in matters referred by H. M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (S. 5)—	
Notified by H. M. Inspector ... ..	13
Reports (of action taken) sent to H. M. Inspector	13
Other ... ..	197
Underground Bakehouses (S. 101) :—	
In use at the end of the year ... ..	30
Not in use at the end of the year ... ..	17
Demolished ... ..	1

NOTE.—The Factory and Workshop Act, 1901 (S. 132), requires the Medical Officer of Health in his Annual Report to the District Council to report specifically on the administration of that Act in workshops and workplaces, and to send a copy of his Annual Report, or so much of it as deals with this subject, to the Secretary of State (Home Office). If the Annual Report is presented otherwise than in print, it is unnecessary to include in the copy sent to the Home Office the portions which do not relate to factories, workshops, workplaces, or homework. The duties of Local Authorities and the Medical Officer of Health under the Act of 1901 are detailed in the Home Office Memorandum of December, 1904. A further Memorandum, on the Home Work Provisions of the Factory Act, was issued to all District Councils and Medical Officers of Health in October, 1906.

I append a brief Statement on the Memorandum of the Home Office upon the Structural requirements of the Factory and Workshop Acts, as

### 1. Means of escape from fire :

Bye-laws have been in operation since 1908. These have been amended, and in their amended form were approved by the Local Government Board in 1913.

A large amount of work has been done under these bye-laws, and practically the whole of the factories and workshops have been dealt with.

### 2. Sanitary accommodation :

Although the work has not been carried out under the Sanitary Accommodation Order, 1903, the conditions stated in the Memorandum have been enforced, and all the factories and workshops have been dealt with, although changes are constantly occurring.

3.—HOME WORK, 1918.

NATURE OF WORK	OUTWORKERS' LISTS, SECTION 107.						OUTWORK IN UNWHOLESALE PREMISES, SECTION 108		OUTWORK IN INFECTED PREMISES, SECTIONS 109, 110		
	Sending twice in the year		Sending once in the year		Lists	Workmen	Instances	Prosecutors	Instances	Prosecutions (Sections 109, 110)	
	Lists	Con-tractors	Workmen	Outworkers							
Wearing Apparel—											
(1) Making, etc. . . . .	792	494	38	10	16	..	..	..	..	..	
(2) Cleaning and washing . . . . .	2	2	..	..	..	..	..	..	..	..	
Household linen . . . . .	..	..	..	..	..	..	..	..	..	..	
Lace, lace curtains, and nets . . . . .	2	..	11	..	..	..	..	..	..	..	
Curtains and furniture hangings . . . . .	..	..	..	..	..	..	..	..	..	..	
Furniture and upholstery . . . . .	6	11	4	..	..	..	..	..	..	..	
Electro-plate . . . . .	..	..	..	..	..	..	..	..	..	..	
File making . . . . .	..	..	..	..	..	..	..	..	..	..	
Brass and brass articles . . . . .	..	..	..	..	..	..	..	..	..	..	
Furriers . . . . .	..	..	..	..	..	..	..	..	..	..	
Cables and chains . . . . .	..	..	..	..	..	..	..	..	..	..	
Anchor and grapnels . . . . .	..	..	..	..	..	..	..	..	..	..	
Shopping Bag Makers . . . . .	..	..	..	..	1	1	6	..	..	..	
Locks, latches, and keys . . . . .	..	..	..	..	..	..	..	..	..	..	
Umbrellas, etc. . . . .	36	2	24	1	..	..	..	..	..	..	
Artificial flowers . . . . .	..	..	..	..	..	..	..	..	..	..	
Nets, other than wire nets . . . . .	..	..	..	..	..	..	..	..	..	..	
Fents . . . . .	2	..	8	..	..	..	..	..	..	..	
Quilts . . . . .	14	6	61	..	..	..	..	..	..	..	
Gold beaters . . . . .	..	..	..	..	..	..	..	..	..	..	
Paper, etc., boxes, paper bags . . . . .	4	..	5	1	1	..	3	..	..	..	
Window blinds . . . . .	2	..	2	..	..	..	..	..	..	..	
Sponges . . . . .	..	..	..	..	..	..	..	..	..	..	
Hair pads . . . . .	2	..	2	..	..	..	..	..	..	..	
Carding, etc., of buttons, etc. . . . .	2	..	9	..	..	..	..	..	..	..	
Opticians . . . . .	2	2	..	..	..	..	..	..	..	..	
Handkerchief hemmers . . . . .	36	11	138	..	..	..	..	..	..	..	
Chocolates and sweetmeats . . . . .	..	..	..	..	..	..	..	..	..	..	
Stuffed toys . . . . .	2	..	84	..	..	..	..	..	..	..	
			A notification sent with a blank list to each Employer twice a year								

## HOUSING REQUIREMENTS IN THE CITY OF MANCHESTER.

The figures are summarised below.

The number of houses certified to, and dealt with by, the Housing Committee from February, 1885, to December 31st, 1918:—

	Number Certified and ordered to be Closed	Number of Houses added together or to other Houses	Number Demolished	Number Repaired and Re-opened	Number Closed	Number not Closed	Number which stand Adjourned
Totals.. ..	27294	3409	6734	13339	1344	2368	100

The extent to which these operations have been reduced is seen from the corresponding figures relating to 1918:—

Totals.. ..	4	..	..	..	4	..	.
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The number of conversions from pail-closets and midden privies to water-closets is given herewith:—

From April 1st, 1903, to March 31st, 1918 .. .. 75,156

From April 1st, 1917, to March 31st, 1918 .. .. 3

The numbers still requiring to be replaced are—middens, 48; pail-closets, 1,403.

—————

THE FOLLOWING TABLE SHOWS THE RESULTS OF INSPECTION OF HOUSES REPORTED TO THE HOUSING SUB-COMMITTEE AS UNFIT FOR HUMAN HABITATION DURING THE YEAR 1918.

Number of Dwelling-houses inspected for all purposes .. . .	23,126
„ considered by the District Inspector of Nuisances unfit for human habitation .. . . . . . . . . . .	4
„ of representations made by the Sanitary Superintendent under a Local Act .. . . . . . . . . . .	4
„ of Closing Orders made .. . . . . . . . . . .	4
„ of Dwelling-houses the consideration of which stand adjourned .. . . . . . . . . . .	..
„ put in a fit state for human habitation after Closing Order had been made .. . . . . . . . . . .	..

General character of defects stated to exist :—

Ventilation defective .. .. .	2
Closet accommodation defective . . . . .	4
External disrepair .. .. .	2
Internal disrepair .. .. .	4
Drainage defective .. .. .	2
Dampness .. .. .	2
Water supply defective .. .. .	1
Dirty—always immediately cleansed .. .. .	3
Arrangement for deposit of refuse defective .. .. .	1
Yards require paving .. .. .	1

The number of new houses certified during the years 1916–1917 is 19, as compared with 119 in 1915–1916, 410 in 1914–1915, 748 in 1914, 997 in 1913, and 1,072 in 1912.

In neighbouring areas no new houses were certified during 1918 against 8 in 1917, 52 in 1916, whilst in 1915 it was 238.

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## MONSALL HOSPITAL.

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REPORT BY T. E. DICKINSON, M.B., Ch.B., Acting Medical Superintendent.

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### REPORT FOR 1918.

Owing to the prolonged absence (through ill-health) of Dr. J. Fletcher, the Medical Superintendent ; to an abnormal amount of illness, due to the Influenza epidemic, among the nursing staff ; and to the difficulty in obtaining adequate medical assistance, the work of the hospital during 1918 was carried on under difficulties.

The number of patients admitted was 1,733, a decrease of 98 on the preceding year. Included in this number were 289 soldiers.

The average daily number of patients in hospital was 243·0, as against 238·0 in 1917.

The average length of stay in hospital for all patients who recovered was 43·7 days ; for fatal cases, 10·2.

The average daily number of resident officers, nurses, and servants was 151.



The fatality rate for all cases was 6.0 per cent., as against 7.2 in 1917. Eighteen of the deaths occurred within 48 hours of admission.

The health of the staff during the year suffered severely as a consequence of the Influenza epidemic. Fifty-two nurses and twenty-two maids, or well over half the total female staff, contracted Influenza. Several of the cases were complicated by severe Broncho-Pneumonia, but all made good recoveries.

One Nurse died in the Manchester Royal Infirmary from Brain Tumour.

Three Nurses contracted Diphtheria, one Enteric Fever, two Rubella, and two Mumps. All made good recoveries.

Eight Probationers left during or at the end of their trial months; Twenty-five finished their training, twelve of whom proceeded to a General Hospital.

Three Nurses left for Private nursing.

Three Sisters left for Military nursing.

#### SCARLET FEVER.

The number of patients admitted was 672, which is 73 less than in 1917.

The type of disease, generally speaking, was mild; 18 deaths occurred, giving a fatality rate of 2.7 per cent., as against 2 in 1917. The rate was higher in males than in females.

Three patients died within 48 hours of admission.

The average stay in hospital for patients who recovered was 60 days; for fatal cases, 10.5.

#### POST-SCARLATINAL DIPHTHERIA AND DIPHTHERIA "CARRIERS."

No case of Post-Scarlatinal Diphtheria occurred.

A culture was taken from the nose and throat of each Scarlet Fever patient on admission, with the result that 10.4 per cent. of the patients were found to be harbouring a bacillus corresponding morphologically to the Diphtheria Bacillus. The bacillus was found in the nose in 8.2, the throat in 1.6, and the nose and throat in 0.6 per cent. of the cases.

#### "RETURN" CASES.

The number of alleged infecting cases, which gave rise to 16 secondary cases out of a total of 748 discharges, was 15. This gives a "return" case rate of 2.0 per cent., as against 1.8 in 1917.

If the interval which elapsed between the arrival home of the infecting patient and the onset of the "return" case be limited to a month, the rate becomes 1·8 per cent., as against 1·7 in 1917.

The average number of days ill of the infecting cases was 67·7, and the average interval, in days, between the return home of the patient and the onset of the "return" case 14·0, the extremes being 1 and 58.

Ten of the 15 infecting patients had uncomplicated attacks.

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#### DIPHTHERIA.

Four hundred and fifty-nine patients were admitted, being 22 less than in 1917. Thirty-two "carriers" were treated, and are not included in the calculated death-rate.

Forty-six deaths occurred, giving a fatality rate of 10 per cent., as against 11·3 in 1917. The rate was higher in males than in females.

Eighteen of the deaths took place within 48 hours of admission. Of 11 fatal cases, 7 were complicated by Broncho-Pneumonia, 2 by Measles, and 1 each with Phthisis and Tuberculous Ulceration of the Intestine.

The larynx was found to be involved on admission in 17·7 per cent. of the cases.

Tracheotomy was performed on 59 patients, of whom 15 died, giving a fatality rate of 25·4 per cent. Of the deaths, 9 occurred within 48 hours of admission, and in 2 cases Measles was co-existent.

A serum rash was noted in 8·2 per cent. of those injected.

The average stay in hospital for patients who recovered was 51 days; for fatal cases, 8·7.

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#### ENTERIC FEVER.

The number of admissions was 51, or 16 fewer than in 1917.

Six patients died, giving a fatality rate of 12 per cent., as against 4·4 in 1917.

One death occurred within 48 hours of admission.

The average stay in hospital for patients who recovered was 57 days; for fatal cases, 5·8.

Before discharge from hospital the stools and urine of all patients were submitted to bacteriological examination to ascertain the absence of the Typhoid Bacillus. Of 64 cases, 62 gave negative results and 2 positive, the urine being positive in both instances.

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### ERYSIPELÁS.

The admissions numbered 132, an increase of 22 on the previous year.

Five deaths occurred, giving a fatality rate of 3·4 per cent., as against 5·8 in 1917.

The average stay in hospital for patients who recovered was 21 days ; for fatal cases, 3·6.

### PUERPERAL FEVER.

Fifty-seven patients were admitted, an increase of 17 on 1917.

The infant was in 23 instances admitted with the mother.

Seven patients died, giving a fatality rate of 12·6 per cent. Two deaths took place within 48 hours of admission.

The average stay in hospital for patients who recovered was 29 days ; for fatal cases, 14·7.

### CEREBRO SPINAL FEVER.

Eight patients were admitted, of whom 6 recovered, 2 died, giving a fatality rate of 25 per cent. as against 66·6 per cent. in 1917. Two deaths occurred within 48 hours of admission.

One "carrier" was admitted for treatment.

### OTHER DISEASES.

In this class are included cases of Measles, Rubella, and Varicella, patients whose illness was incorrectly diagnosed, certain cases of non-notifiable disease, and infants admitted with their mother.

Twenty-eight deaths occurred, giving a fatality rate of 7·9 per cent. Two deaths took place within 48 hours of admission.

The average stay in hospital for patients who recovered was 36·7 days ; for fatal cases, 13·7.

### MALNUTRITION CASES.

The ten cots at the Crèche were full practically the whole year with children suffering from Malnutrition.

Ten cases were in hospital at the end of 1917, 14 cases were admitted, 14 were discharged in a good state of health, 1 died, and 9 remained at the end of the year.

The one death was due to Malnutrition and Rickets.

Speaking generally, the results have been quite satisfactory.

The length of stay of most of the children has been a long one, so as to give them a good start in life.

It is worth recording that no case of Infectious Disease occurred among the patients during the year.

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#### LABORATORY REPORT.

All the necessary media were prepared by the Dispenser at the hospital. The number of Bacteriological examinations performed was as follows:—

Cultures from Nose, Throat, and Ear .. .. .	7,327
,,    Spinal Fluid .. .. .	1
,,    Uterus .. .. .	45
Widal reactions. . . . .	77
Para-typhoid B reactions .. .. .	1
Bac. Enteritidis .. .. .	8
Typhoid Stools .. .. .	82
,,    Urine .. .. .	88
Examination of Spinal fluid .. .. .	51
,,    Pus .. .. .	3
,,    Sputum .. .. .	9
,,    Hairs .. .. .	18
Smears from Throat .. .. .	77
	<hr/>
	7,787

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#### STATISTICAL REPORT FOR THE YEAR 1918.

Remaining in hospital on January 1st, 1918 .. .. .	310
Patients admitted during 1918 .. .. .	1,733
	<hr/>
	2,043
	<hr/>
Recovered and died during 1918 .. .. .	1,879
Remaining in hospital on December 31st, 1918 .. .. .	164
	<hr/>
	2,043
	<hr/>
Total number of deaths during 1918 .. .. .	113
Net mortality .. .. .	6%
Of the deaths, 16 occurred within 48 hours of admission	14.1%
Daily average number of patients .. .. .	243
,,    ,,    officers, nurses, and servants	151
Average stay of recovered patients (in days) .. .. .	43.7
,,    ,,    fatal cases .. .. .	10.2

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TABLE SHOWING NUMBERS OF VARIOUS DISEASES TREATED, 1918.

DISEASE	Remaining in Hospital, Jan. 1st	Admitted	Discharges and Deaths	Remaining in Hospital, Dec. 31st
Scarlatina .....	177	672	766	83
Diphtheria .....	84	459	491	52
Enteric Fever.....	9	51	59	1
Erysipelas .....	17	132	147	2
Puerperal Fever.....	2	57	55	4
Cerebro-Spinal Fever ....	0	8	8	0
Other Diseases .....	20	355	353	22
<b>Total.....</b>	<b>310</b>	<b>1733</b>	<b>1879</b>	<b>164</b>

## COMPLICATIONS IN SCARLET FEVER.

Complication	Number	Percentage
Rhinorrhœa in Convalescence..	88	13.4
Otorrhœa.....	53	7.8
Nephritis .....	7	1.04
Albuminuria of Convalescence..	61	9.07
Adenitis and Abscess .....	21	3.1
Onychia .....	6	0.8
Relapse .....	4	0.5
Arthritis .....	4	0.5
Endocarditis .....	1	0.14
Mastoid Abscess.....	1	0.14

## DIPHTHERIA.

AGE OF PATIENTS	MALE		FEMALE		TOTAL		Mortality percent.	Mortality percent.	Mortality percent.
	Cases	Died	Cases	Died	Cases	Died			
Under 1 year ...	22	3	9	...	31	3			
1 to 2 years ...	15	4	15	...	30	4			
2 " 3 " ...	26	2	19	1	45	3			
3 " 4 " ...	23	2	18	3	41	5			
4 " 5 " ...	37	2	24	5	61	7			
5 " 10 " ...	64	12	71	9	135	21			
10 " 15 " ...	23	1	25	1	48	2			
15 " 20 " ...	11	...	10	...	21	...			
20 " 25 " ...	5	...	9	...	14	...			
25 " 30 " ...	4	...	7	...	11	...			
30 and over ...	5	...	17	1	22	1			
Total .....	235	26	11	224	20	8.9	459	46	10

10 deaths occurred within 48 hours of admission.  
Of the deaths, 4 were complicated by other co-existent diseases.

## DIPHTHERIA.

TABLE SHOWING INTERVAL ELAPSING BETWEEN DATE WHEN THE PATIENT WAS FIRST SEEN BY A MEDICAL MAN AND THE DATE OF ADMISSION TO HOSPITAL, ALSO SHOWING DAY OF DISEASE ON ADMISSION.

DAYS' INTERVAL	Interval between admission and date when patient was first seen by a Medical Attendant		Day of disease on admission	Day of disease on admission	
	All Cases	Deaths		All Cases	Deaths
Sent in on the same day	113	13	Sent in on the same day	20	...
1 day interval .....	101	10	2nd day.....	81	5
2 days' " .....	56	7	3rd " .....	75	8
3 " " .....	58	4	4th " .....	86	16
4 " " .....	44	3	5th " .....	56	5
5 " " .....	25	3	6th* " .....	44	4
6 " " .....	17	2	7th " .....	27	3
7 " " .....	8	...	8th " .....	21	2
8 " " .....	3	...	9th " .....	12	...
9 " " .....	8	...	10th " .....	7	1
10 " " .....	0	...	Over 10th day ...	30	2
Over 10 days' interval	26	4			
Total .....	459	46	Total .....	459	46

## COMPLICATIONS IN DIPHTHERIA.

Complication	Number of Cases	Percentage
Otorrhœa .....	13	2·8
Broncho-pneumonia .....	12	2·6
All forms of Paralysis .....	31	6·7
Palate alone .....	22	4·7
Cardiac Paralysis .....	3	0·6
Other Paralysis .....	6	1·3

## TRACHEOTOMY CASES.

AGE OF PATIENTS	NO. OF PATIENTS	DIED	MORTALITY PER CENT.
Under 1 year .....	2	2	100
1 to 2 years .....	11	2	18·1
2 " 3 " .....	9	3	33·3
3 " 4 " .....	10	1	10
4 " 5 " .....	3	2	66·6
5 " 10 " .....	24	5	20·8
10 " 15 " .....	...	...	...
15 and over .....	...	...	...
Total .....	59	15	25·4

Of the deaths, 9 occurred within 48 hours of admission, and in 2 cases Measles was co-existent.

## ENTERIC FEVER.

TABLE SHOWING INTERVAL ELAPSING BETWEEN DATE WHEN PATIENT WAS FIRST SEEN BY A MEDICAL MAN AND THE DATE OF ADMISSION TO HOSPITAL, ALSO SHOWING DAY OF DISEASE ON ADMISSION.

DAYS' INTERVAL	Interval between admission and date when Patient was first seen by a Medical Attendant		Day of disease on admission		Day of disease on admission	
	All Cases	Deaths	All Cases	Deaths	All Cases	Deaths
Sent in on same day...	2	...	1st day	...	...	...
1 day interval	1	...	2nd "	...	1	...
2 days' "	...	...	3rd "	...	...	...
3 " "	2	...	4th "	...	...	...
4 " "	2	...	5th "	...	...	...
5 " "	1	...	6th "	...	1	...
6 " "	2	...	7th "	...	1	...
7 " "	5	...	2nd week	...	26	3
8 " "	2	...	3rd "	...	13	...
9 " "	4	1	4th "	...	5	2
10 " "	3	1	5th "	...	3	1
Over 10 days' interval	27	4	Over 5th week	...	1	...
Total ...	51	6	.....		51	6

## STATEMENT re BAGULEY SANATORIUM FOR 1918.

BY DR. D. E. I. BUNTING, *Assistant Medical Officer and Acting-Superintendent.*

## Tables for 1918.

In Sanatorium, January 1st, 1918 .. .. .	292
Admitted .. .. .	731
Discharged .. .. .	620
Died .. .. .	152
Remaining on December 31st, 1918 .. .. .	251
Total patients treated.. .. .	1023
(of whom 3 were cases from the Bucklow Union and 234 were discharged soldiers or sailors)	
Average number of days in 1918 .. .. .	104.6



*Admissions Divided as to Age and Sex.*

Ages	Males	Females	Total
5 to 14 .. .. .	2	5	7
15 „ 24 .. .. .	107	88	195
25 „ 34 .. .. .	113	95	208
35 „ 44 .. .. .	123	49	172
45 „ 64 .. .. .	110	39	149
	455	276	731

Those discharged with any capacity for work were classified as

Good .. .. .	57
Fair .. .. .	140
Poor .. .. .	132
Very poor .. .. .	71

The death-rate per cent. was 14.8.

The death-rate in 1917 was 15.7.

There were two epidemics of Influenza, June–July and October–November, 1918. They conformed in type to those elsewhere. No deaths occurred in the summer.

The incidence in both cases, especially in the autumn, fell on Blocks 6 and 7, where, in spite of attempts at isolation, the disease spread from bed to bed in the small wards, according to the closeness of contact.

Food rationing occasioned considerable difficulties throughout the year.

The dental surgery was in full working order for some months, and dentures have been provided, in addition to fillings and extractions in such cases (of insured patients) as were certified to need it for their medical treatment. Extractions in 95 cases, scaling 4, dressing 4, adjustments of plates 8, fillings 7, sets of teeth 14.

A second assistant was appointed in March.

The Medical Superintendent resigned in October.

Artificial pneumothorax was tried in 5 cases. It was moderately successful in 1, temporarily successful in 1 (a patient who died some months after), unsuccessful in relieving symptoms in 2, and proved impossible in 1 owing to dense adhesions.

The Laboratory work has been on routine lines. 1,479 specimens of sputum were examined for Tubercle Bacilli, 814 being positive and 665 negative.

D. E. L. BUNTING,  
*Acting Medical Superintendent.*

## ABERGELE SANATORIUM.

REPORT FOR THE YEAR ENDING MARCH 31ST, 1919.

BY DR. A. G. M. GRANT, *Medical Superintendent.*

During the twelve months ending March 31st, 1919, 139 patients were admitted to the Sanatorium, and 5 children to Peny-coed bungalow. A similar number was discharged, and there was one death.

Of the 5 children discharged from Peny-coed, 3 were much improved (spine 1; hip joint 1; cervical glands 1), while in 2 the disease continued to spread (both multiple bone lesions with suppuration).

The following table shows a classification according to age and sex of the cases under treatment :—

Ages	MALES			FEMALES		
	Admitted	Discharged	Died	Admitted	Discharged	Died
0 to 4 .. .. .	..	..	..	..	..	..
5 „ 14 .. .. .	2	3	..	3	2	..
15 „ 24 .. .. .	35	30	..	11	14	..
25 „ 34 .. .. .	41	41	..	10	9	..
35 „ 44 .. .. .	24	28	..	3	3	..
45 „ 64 .. .. .	13	13	1	2	1	..
65 + .. .. .	..	..	..	..	..	..
Total .. ..	115	115	1	29	29	..

Table 2 shows a classification of the immediate results of treatment in the discharged pulmonary cases :—

(A) *Patients in whose sputum Tubercle Bacilli were found.*

	No. of Cases	Disease Arrested	Much Improved	Improved	Stationary or Worse	Died in Sanatorium
Stage I. .. .. .	2	..	2	..	..	..
Stage II. .. .. .	6	1	3	1	1	..
Stage III. .. .. .	50	..	13	26	10	1
Total .. ..	58	1	18	27	11	1

## (B) Patients in whose sputum Tubercle Bacilli were not found.

	No. of Cases	Disease Arrested	Much Improved	Improved	Stationary or Worse	Died in Sanatorium
Stage I. . . . .	42	24	15	2	..	1
Stage II. . . . .	23	3	16	4	..	..
Stage III. . . . .	13	..	6	6	1	..
Total . . . . .	78	27	37	12	2	..

Four patients were too short a time under treatment to allow of classification.

During the year an attempt was made to induce artificial pneumothorax in four cases, *i.e.*, almost three per cent. of the cases admitted, and in these the disease had been progressive in spite of ordinary Sanatorium treatment. In one, dense pleural adhesions rendered the induction of a pneumothorax impossible; in another, the treatment was abandoned after five injections owing to the limited collapse of the lung, while in the remaining two the results were satisfactory. The statistics of most writers seem to indicate that less than five per cent. of all cases are suitable for this treatment, and this proportion is further reduced when those in the advanced stages are eliminated.

There were also under treatment four return pneumothorax cases. In one, free pleural space was found after a lapse of seven months and the treatment was resumed; in the remaining three, no attempt was made to induce a collapse as the disease had become active in the other lung. One of these, with extensive involvement of both lungs, did exceedingly well in the Sanatorium, but the other two benefited only slightly.

Treatment by intra-muscular injections of saccharose—Aflegmatolo—as recommended by Professor D. La Monaco, of Rome, was also begun, and, although it is still under trial, the results so far have been disappointing.

The main treatment was based on the system of rest and graduated exercise, as outlined in last year's report. The long continuance of rain throughout the winter and spring greatly interrupted the sequence of gradation in outdoor work.

Table 3 shows a classification of the patients according to the stage of treatment reached before discharge, with the respective average gain in weight :—

Stage of Treatment	Number of Cases	Average gain in weight	
		lbs.	ozs.
No work . . . . .	38 (9 not weighed)	7	6
Work for 1 hour . . . . .	17	6	5½
Work for 2 hours . . . . .	42	7	13½
Work for 3 hours . . . . .	42	12	4

Of the discharged patients, 122 gained in weight, the average gain being 9lb. 13½ozs. ; 6 lost in weight, with an average loss of 3lb. 7ozs. ; 2 remained stationary ; while 9 were not weighed. The greatest individual gain was 42lbs. in a male patient after six months treatment.

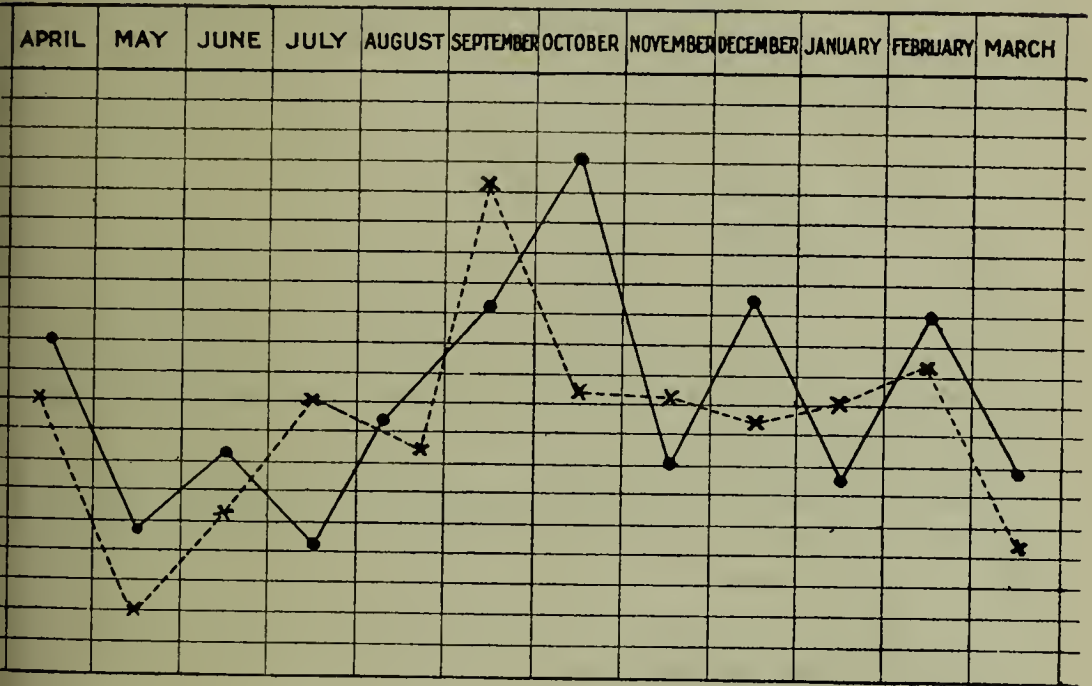
The seasonal influence on the weight of the patients was studied for the past two years, and the accompanying curves have been plotted to show the comparison. In April, 1918, rationing of food began and the allowance of butcher meat was fixed at ½lb. per male patient per day, in contrast to the previous year (April, 1917—March, 1918), when the patients were given, on an average, approximately ¾lb. a day.

As to Bacon during the period of rationing (May, 1918—July, 1918), the scale was 8ozs. per patient per week, but on its withdrawal the quantity was increased to a weekly average of 14ozs. per patient for the next eight months ending March, 1919. In the previous year 12ozs. per week were given, on an average, from April until October, but for the following six months (October, 1917—March, 1918) none was obtainable.

The consumption of Margarine was much the same in both years. As to farm and garden produce (milk, eggs, potatoes, and vegetables), the quantities varied little in either year, all being supplied from the farm and garden.

The above comparison of dietaries between the two years, viz. : April, 1917—March, 1918, when the supply was fairly liberal, and April, 1918—March, 1919, when rationing of certain foodstuffs was in operation, is given as it may have some bearing on the differences in the gain in weight. The gain in weight for the year 1918-1919 was lower on the total average than that for the previous year.

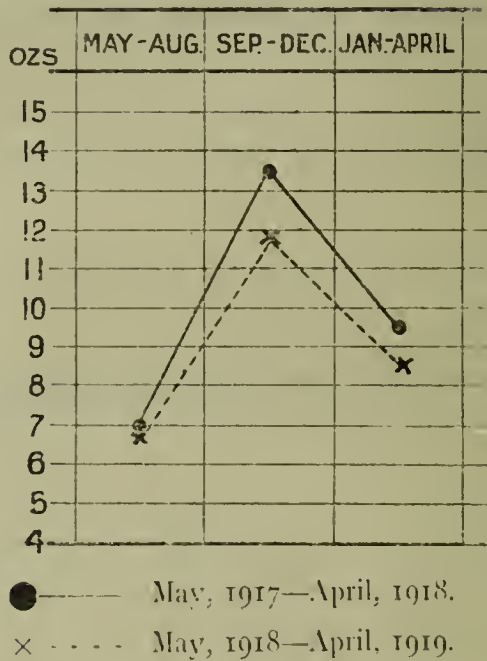
The following curve represents the average weekly gain in weight per patient for each month of the year.



● ——— April, 1917—March, 1918.  
 × - - - - April, 1918—March, 1919.

The two curves show a similarity in that there is a rapid rise in the late autumn after the minimum of gain in the spring and summer. Meteorological variations may help to account for certain differences between the weights in corresponding months of the two years, as instanced between October, 1917, and October, 1918. In the previous year, this month was dry and bracing, while in the latter it rained almost continuously. But with the months taken collectively, there is seen a marked resemblance between the two years, showing a definite seasonal influence. The average weekly gain for the four consecutive months—May to August—was the lowest, while that for the period September to December was the highest.

The following chart shows this graphically :—



During the year, 29,000 young pine were planted on the estate. Many trees were felled and a large amount of firewood was burned, which effected a considerable saving in the consumption of coal.

Ysgeirallt—a portion of the estate previously tenanted—was taken over in September, and this addition of land allowed fuller scope in the development of the farming methods.

An ample supply of milk, eggs, and vegetables for the needs of the Sanatorium was provided by the farm and garden.

The following financial statement shows the expenditure incurred during the year in the maintenance of the Sanatorium, together with the interest and sinking fund charges :—

Daily average number of patients . . . . .	56		
Daily average number of resident staff . . . . .	19		
			75
			<hr/>
			£ s. d.
Total Expenditure, not including Interest and Sinking Fund			
Charges . . . . .	7,355	14	11
Less Receipts . . . . .	1,025	5	8
			<hr/>
	6,330	9	3
			<hr/>

	£	s.	d.
Interest and Sinking Fund Charges . . . . .	1,664	2	2
Total Expenditure, including Interest and Sinking Fund Charges, but not deducting Receipts . . . . .	9,019	17	1
Cost of Provisions . . . . .	2,909	18	11
Cost of each patient per week, not including Interest and Sinking Fund Charges, and not deducting Receipts . .	2	10	5½
Cost of each patient per week after deducting Receipts . .	2	3	3¾
Cost of Provisions per head per week for patients and staff combined . . . . .	0	14	10½
Cost of each patient per week other than food, after deducting Receipts . . . . .	1	3	5¾
Cost of each patient per week, including Interest and Sinking Fund Charges, and not deducting Receipts . .	3	1	8¼

## REPORT BY MR. A. T. ROOK, SUPERINTENDENT OF THE SANITARY DEPARTMENT.

Sanitary Department,  
Town Hall, Manchester.

In presenting to the Medical Officer of Health the report of the work transacted in the Sanitary Department for the year ending 31st March, 1918, I beg to state that the City, for inspection and other purposes, is divided into 33 Districts to each of which one Sanitary Inspector has been assigned.

In addition to these there is a Superintendent, a Deputy Superintendent, one Chief Inspector, one Drainage, four Smoke, one Canal Boats, four Lodging-house, three Adulteration of Food, two Milkshops, ten Factory and Workshops Inspectors, including two Female Inspectors, and two Drain Examiners. There is also a staff of 30 Clerks for clerical and other work.

In the Drainage Department there is also a Chief Inspector, three Clerks, and two Clerks of Works for supervising and measuring up work done by the contractors employed by the department in carrying out private drainage work.

Only work of an absolutely essential character has been carried out during the year, owing to the staff having been greatly depleted during the present national crisis, 74 officials of the department having joined His Majesty's Forces.

The number of complaints of nuisances of various kinds made during the year was 5,039:—

1,743 through the Medical Officer of Health's Department.

3,277 by the public.

19 through the Police.

### HOUSES LET IN LODGINGS.

Under the powers given by Section 90 of the Public Health Act the bye-laws made thereunder have been enforced.

The number of houses on the register is 2,122. To these 24,518 day visits and 590 night visits have been paid. 195 infringements of the regulations have been reported and dealt with.

## DAIRIES, MILKSHOPS, AND COWSHEDS REGULATIONS.

Under this Order, which was made in July, 1879, and the Regulations thereunder in 1896, 2,602 milkshops and dairies and 96 cowkeepers are now on the register. The number of cows kept is 1,429. The number of visits to dairies, milkshops, and cowsheds was 6,170. Two infringements of the regulations have been reported and dealt with, also 83 cases against Milk sellers for infringing the Milk (Prices) Order, 1917, were reported to the Committee; of these, 54 were summoned before the magistrates and 29 cautions were given by the Committee.

The number of ice-cream manufacturers on the Register is 488. The number of visits was 1,334. One person was reported to the magistrates for infringement of the regulations.

## WORKSHOPS, BAKEHOUSES, SHOPS ACTS, AND ORDERS MADE THEREUNDER.

*Workshop Acts* During the year the Factory and Workshop Act of 1901 has received the careful attention of the Male and Female Inspectors specially appointed for the duties, the Female Inspectors devoting a large portion of their time to visiting the 2,136 houses of outworkers in the City.

*Means of Escape in case of Fire* Provision for means of escape in case of fire in factories and workshops has also received attention, and all known cases of danger have been dealt with.

Periodical changes will, of course, from time to time take place in various ways which will bring buildings within the meaning of the Act, and necessitate the constant supervision of the Inspectors and action on the part of the Authorities.

*Bakehouses* The number of bakehouses in the City is 635; of these, 48 are situate in basement premises, and special attention has been given to them.

*Shops Act* The Shops Act, which came into force on the 1st May, 1912, has received attention, registers of all shops having been prepared. Orders of Exemption from compulsory closing have been made in 33 trades. In 5 trades Orders have been made fixing the day for the weekly half-holiday, and in 3 trades Orders have been made fixing the closing hour for the several days of the week.

*Outworkers* Many visits have been paid to houses in various parts of the City in which outwork is carried on, as will be seen on reference to the following tabulated statement, but constant visitation is necessary to maintain the standard of cleanliness which is to be desired, especially in houses in which shirt-making, handkerchief-hemming, brace-making, and umbrella-covering, etc., is done.

The people, as a rule, appear willing to carry out any suggestion made by the Inspectors to keep their houses clean; but at the same time it is almost impossible for small houses, sometimes containing large families, to be kept in such a satisfactory condition as workshops.



The work done under the above Acts is shown in the following tables:—

Number of Districts.	SHOPS				WORKSHOPS				BAKEHOUSES				OUT- WORKERS		
	Number of cases in which Magisterial proceedings have been taken	Number of cases in which Magisterial proceedings have been taken	Shops Act	Employment of Children Act	Number of cases in which Magisterial proceedings have been taken	Number of cases reported to the Factory Inspector	Number of Infringements reported to the Committee	Number of cases in which Magisterial proceedings have been taken	Number of premises in which Sanitary defects were found	Number of cases reported to the Factory Inspector	Number of Infringements reported to the Committee	Number of cases in which Magisterial proceedings have been taken	Number of visits to houses where outworkers are employed	Number of houses found dirty	
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
3	1100	4	...	...	3124	346	139	8	5	14	58	354	19	...	
4	2811	...	4	...	2092	202	89	...	3	55	100	459	5	...	
5	2883	...	3	...	1723	154	39	...	2	13	88	496	7	2	
6	...	...	1	...	...	...	88	...	8	59	27	240	1	...	
7	245	1	...	...	3891	329	...	...	...	...	...	...	...	...	
8	715	...	...	...	577	21	1	2	3	...	...	...	...	6145	
...	949	...	...	...	1553	110	3	3	3	...	...	...	...	4813	
TOTALS	8703	1	1	7	12960	1162	359	13	10	27	185	1549	32	10960	97

Totals on Registers Shops, 22,033; Workshops, 3,513; Bakehouses, 635.

(a) Engaged on Munition Work.  
(b) With H.M. Forces.

SHOWING THE NUMBER AND CLASSIFICATION OF PERSONS EMPLOYED AS  
OUTWORKERS BY FIRMS WITHIN THE CITY, AND THE NUMBER OF  
SUCH FIRMS.

TRADES	No. of Employers	No. of Outworkers or Contractors employed
Makers of Wearing Apparel ... ..	408	2118
Button Carding ... ..	1	5
Cabinet Makers and Upholsterers ... ..	3	9
Cleaning and Washing ... ..	1	1
Dolls and Toys ... ..	1	36
Fent Sorters ... ..	1	4
Hair Pad and Frame Makers ... ..	1	1
Handkerchief Hemmers ... ..	17	73
Lace, Lace Curtains, and Nets ... ..	1	6
Opticians ... ..	1	1
Paper Bags and Box Makers... ..	3	5
Quilt, Cushion, &c., Makers ... ..	7	20
Umbrella Trimmers... ..	18	123
Window Blinds ... ..	1	1
Totals ... ..	464	*2403

\* 2136 of these are in the City, the remainder are in the districts of other Local Authorities, to whom lists showing the names and addresses have been sent.

SHOWING THE PROCEEDINGS TAKEN UNDER THE PROVISIONS OF THE ADULTERATION  
OF FOOD AND DRUGS AND THE MARGARINE ACTS.

Articles.	Number of Samples Obtained	Number Adulterated	Number not Adulterated	Number Summoned before Magistrates	Number Fined	Number Ordered to Pay Costs only	Number Dismissed or Withdrawn	Number Cautioned by Committee	Amount of Fines Imposed			Amount of Costs Ordered to be Paid		
									£	s.	d.	£	s.	d.
Arrowroot and Corn Flour	12	...	12	...	...	...	...	...	...	...	...	...	...	...
Baking Powder	26	...	26	...	...	...	...	...	...	...	...	...	...	...
Butter Dripping	5	...	5	...	...	...	...	...	...	...	...	...	...	...
Butter	36	...	36	...	...	...	...	...	...	...	...	...	...	...
Butter	69	...	69	...	...	...	...	...	...	...	...	...	...	...
Butter	304	3	301	2	1	...	1	..	5	0	0	1	1	0
Carbonated Oil	9	...	9	...	...	...	...	...	...	...	...	...	...	...
Castor Oil	8	...	8	...	...	...	...	...	...	...	...	...	...	...
Cheese	30	...	30	...	...	...	...	...	...	...	...	...	...	...
Cocoa	56	...	56	...	...	...	...	...	...	...	...	...	...	...
Cod Liver Oil	4	...	4	...	...	...	...	...	...	...	...	...	...	...
Coffee	122	...	122	...	...	...	...	...	...	...	...	...	...	...
Confectionery & Mince-meat	52	...	52	...	...	...	...	...	...	...	...	...	...	...
Condensed Milk and Preserved Cream	90	...	90	...	...	...	...	...	...	...	...	...	...	...
Custards	85	...	85	...	...	...	...	...	...	...	...	...	...	...
Chutney	4	...	4	...	...	...	...	...	...	...	...	...	...	...
Curries	68	...	68	...	...	...	...	...	...	...	...	...	...	...
Cherry	2	...	2	...	...	...	...	...	...	...	...	...	...	...
Conserves	29	...	29	...	...	...	...	...	...	...	...	...	...	...
Chutney and Sauces	8	...	8	...	...	...	...	...	...	...	...	...	...	...
Condensed Milk	107	...	107	...	...	...	...	...	...	...	...	...	...	...
Margarine	99	...	99	...	...	...	...	...	...	...	...	...	...	...
Butter (tinned and prepared)	37	...	37	...	...	...	...	...	...	...	...	...	...	...
Milk	1293	105	1188	100	57	3	40	5	220	0	0	88	3	11
Milk (condensed)	15	...	15	...	...	...	...	...	...	...	...	...	...	...
Milk (powder)	1	...	1	...	...	...	...	...	...	...	...	...	...	...
Milk (evaporated)	1	...	1	...	...	...	...	...	...	...	...	...	...	...
General Waters, Cordials, &c.	26	...	26	...	...	...	...	...	...	...	...	...	...	...
Mustard	12	...	12	...	...	...	...	...	...	...	...	...	...	...
Meal	37	...	37	...	...	...	...	...	...	...	...	...	...	...
Vegetable Oil	3	...	3	...	...	...	...	...	...	...	...	...	...	...
Barley	7	...	7	...	...	...	...	...	...	...	...	...	...	...
Pepper	36	...	36	...	...	...	...	...	...	...	...	...	...	...
Peas	4	...	4	...	...	...	...	...	...	...	...	...	...	...
Peas, Tapioca, &c.	79	...	79	...	...	...	...	...	...	...	...	...	...	...
Pumpkins	3	...	3	...	...	...	...	...	...	...	...	...	...	...
Pices	20	...	20	...	...	...	...	...	...	...	...	...	...	...
Pirits	123	...	123	...	...	...	...	...	...	...	...	...	...	...
Piggar	7	...	7	...	...	...	...	...	...	...	...	...	...	...
Pasta	83	...	83	...	...	...	...	...	...	...	...	...	...	...
Peas and Golden Syrup	13	...	13	...	...	...	...	...	...	...	...	...	...	...
Peas	17	...	17	...	...	...	...	...	...	...	...	...	...	...
Pices	23	...	23	...	...	...	...	...	...	...	...	...	...	...
Totals	3065	*108	2957	102	58	3	41	5	225	0	0	89	4	11

In one case no Magisterial proceedings were taken, the sample of Butter being taken informally.

In addition to the above, 348 samples of Milk have been procured from Farmers' dairies by the Sampling Officers for bacteriological examination under the Milk Clauses of the Manchester General Powers Acts.

*Fertilizers and Feeding Stuffs Act, 1906.*

Eight samples were procured under this Act, which were submitted to Professor Péripine for analysis, all of which were reported on as complying with the Act.

## SMOKE NUISANCES.

For the abatement of smoke nuisances the four Inspectors appointed specially for this work have taken 553 timed observations of half-an-hour each, with the result that 68 notices for the abatement of nuisances have been served. Proceedings before the Magistrates have been ordered in 49 cases out of 363 offences reported.

The abnormal number of offenders cautioned was due to the leniency on the part of the Committee, owing to a large number of firms being engaged on war munition work.

Forty-nine were summoned before the Justices, in 38 of which fines were imposed amounting to £68 2s., and costs £2 16s.

Seven orders of abatement were granted and served, and four cases were excused, dismissed, or withdrawn.

Much attention during the past year, as will be seen by the above, has been given to the nuisance caused by the emission of black smoke, not only from the furnaces connected with boilers in mills, warehouses, and other works, but also from chemical and other industries, and the efforts made have already resulted in a considerable reduction of the nuisance.

Chimneys of firms in adjoining districts have also been observed in regard to smoke nuisances, and communications sent to the Authorities concerned.

## CANAL BOATS ACTS.

The number of canal boats on the register is 424.

The number of inspections made was 2,291, resulting in two infringements of the Acts being discovered, which were referred to the Justices to be dealt with.

Caution notices were sent to the owners or masters of 62 boats.

## OFFENSIVE TRADES.

The number of offensive trades on the register is 890. These have been placed under close supervision, and periodical visits paid.

## UNHEALTHY DWELLINGS.

During the year 3 houses were certified as unfit for human habitation, and ordered to be closed by the Sanitary Committee.

PROSECUTIONS FOR OFFENCES, WITH RESULTS.

Description of Offence	Number of Sum- monses taken out	Number of Persons Fined, with Costs	Number of Persons ordered to pay Costs only	Number adjourned	Number Excused, or Withdrawn	Amount of Fines Imposed	Amount of Costs ordered to be Paid
Did not close shop for serving Customers one half-day per week .. .. .	1	1	..	..	..	£ s. d. 2 0 0	£ s. d. 0 5 0
Neglecting to discontinue the use of premises as a workshop .. .. .	4	..	..	..	4	..	..
Employing children under 14 years of age between 9-0 p.m. and 6-0 a.m. .. .. .	4	4	..	..	..	2 0 0	0 7 6
Not forwarding lists of outworkers to the Department .. .. .	5	..	..	..	5	..	0 12 0
<b>Total.. .. .</b>	<b>14</b>	<b>5</b>	<b>..</b>	<b>..</b>	<b>9</b>	<b>4 0 0</b>	<b>1 4 6</b>

PARTICULARS RELATING TO THE OPERATIONS OF THE  
CLEANSING DEPARTMENT.

The Medical Officer of Health is indebted to Mr. Williamson, Superintendent of the Cleansing Department, for the following particulars relating to the operations of the Cleansing Department during the year ending 31st March, 1919:—

Cleansing Department,  
Town Hall, Manchester,  
September, 1919.

Dear Sir,

There are within the City 8,011 ash-boxes; 150,609 ash-bins; 1,327 pail-closets; 217 midden-privies; 66 wet middens; 1,435 dry middens; 168,325 water-closets at dwelling-houses; and 40 cesspools. The pail-closets are systematically emptied at regular intervals—once, twice, or thrice weekly, as necessity demands. The middens are emptied as required. The contents of the pail-closets are taken to Holt Town and Water Street. At Holt Town the fecal matter is dried into concentrated manure. The dry refuse is consumed in the Galloway boilers, and generates the steam required for working the machinery. The worthless fine ash, which cannot be consumed, is deposited at the nearest tip at Clayton Vale. The privy refuse and faecal matter, taken to Water Street, is sent away in its crude state as nightsoil to Carrington and Chat Moss Estates. Dry combustible matter is passed into the destructor furnaces or the Galloway boilers at Water Street, and there destroyed. A quantity of fine ash at Water Street is used as an absorbent for the faecal matter from the pail-closets.

The market garbage, of which we have 3,033 tons per annum, is carted to Water Street, and destroyed in the furnaces or sent to the Committee's Estates. Slaughter-house refuse is collected from the abattoirs and private slaughter-houses and sent to Holt Town, where it is passed through dryers, and the dry material is then added to the concentrated manure. Street sweepings are generally deposited at the nearest depot, and afterwards carted to Water Street Depot and Ardwick Sidings, from whence they are despatched to farmers or to the Committee's Estates.

The total quantity of material collected by this Department during the past year amounted to 281,081 tons.

Within the City there are 42 destructor furnaces and 21 boilers, and last year 2,523 tons of mortar were made from the clinker obtained from such furnaces.

During the year 11,359 barrels of water were used in degging the streets.

During the past 27 years we have deposited upon various tips within the City the following quantities of material, viz.:—In 1892, 99,866 tons; 1893, 109,078 tons; 1894, 103,949 tons; 1895, 113,836 tons; 1896, 107,883 tons; 1897, 99,658 tons; 1898, 96,635 tons; 1899, 104,481 tons; 1900, 95,138 tons; 1901, 64,781 tons; 1902, 117,619 tons; 1903, 180,985 tons; 1904, 141,999 tons; 1905, 118,093 tons; 1906, 109,446 tons; 1907, 134,072 tons; 1908, 120,581 tons; 1909, 123,183 tons; 1910, 127,409 tons; 1911, 107,742 tons; 1912, 102,190 tons; 1913, 89,909 tons; 1914, 99,800 tons; 1915, 97,370 tons; 1916, 86,891 tons; 1917, 90,919 tons; 1918, 97,398 tons; and in 1919, 103,874 tons. The bulk of this material was deposited on the tips at Clayton and Harpurhey and on Carrington and Chat Moss Estates. It is composed principally of dry ashes, clinkers, and street sweepings. During last year 13,232 tons of material was sent to Carrington Estate and 33,791 to Chat Moss Estate.

Yours faithfully,

R. WILLIAMSON,

*Superintendent.*

Dr. Niven,  
Medical Officer of Health,  
Manchester.

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TABLES.

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TABLE A.—MANCHESTER, 1918.

CAUSES OF DEATH AT DIFFERENT LIFE PERIODS IN THE 52 WEEKS OF THE YEAR  
PERSONS. — (MALES AND FEMALES.)

CAUSES OF DEATH	All Ages	AGES AT DEATH												
		Under 5 Years		5	10	15	20	25	35	45	55	65	75	
		0-1	1-5	10	10	10	10	10	10	10	10	10	10	
All Causes .....	12181	1378	1423	438	285	388	387	987	1092	1417	1627	1696	924	
A.—GENERAL DISEASES.....	5740	714	792	269	177	279	271	667	614	723	631	438	148	
B.—LOCAL DISEASES.....	5537	487	585	128	95	93	109	293	452	653	940	1085	551	
C.—OTHER SPECIFIED DIS.....	4	1	...	1	...	...	...	...	...	...	2	...	...	
D.—ILL-DEFINED DISEASES...	579	149	9	...	1	1	...	2	...	4	18	141	203	
E.—VIOLENT DEATHS.....	321	27	37	40	12	15	7	25	26	37	36	32	22	
<b>A.—General Diseases.</b>														
Smallpox..	{	Vaccinated.....	...	...	...	...	...	...	...	...	...	...	...	...
	{	Not Vaccinated...	...	...	...	...	...	...	...	...	...	...	...	...
	{	No Statement.....	...	...	...	...	...	...	...	...	...	...	...	...
Cowpox.....	...	...	...	...	...	...	...	...	...	...	...	...	...	
Chickenpox.....	...	...	...	...	...	...	...	...	...	...	...	...	...	
Measles.....	166	40	115	10	...	...	...	...	1	...	...	...	...	
Epidemic Rose Rash.....	...	...	...	...	...	...	...	...	...	...	...	...	...	
Scarlet Fever.....	21	...	9	9	1	1	...	1	...	...	...	...	...	
Typhus.....	...	...	...	...	...	...	...	...	...	...	...	...	...	
Plague.....	...	...	...	...	...	...	...	...	...	...	...	...	...	
Relapsing Fever.....	...	...	...	...	...	...	...	...	...	...	...	...	...	
Influenza.....	2096	57	249	137	84	124	156	410	237	234	202	155	44	
Whooping Cough.....	330	89	226	14	...	...	...	...	...	...	...	1	...	
Mumps.....	...	...	...	...	...	...	...	...	...	...	...	...	...	
Diphtheria and Membr: Croup	58	4	22	28	2	1	...	...	...	1	...	...	...	
Poliomyelitis.....	3	...	...	1	1	...	1	...	...	...	...	...	...	
Cerebro-spinal Fever.....	3	1	...	1	...	1	...	...	...	...	...	...	...	
Simple Cont: Fever.....	2	1	...	...	...	...	...	...	...	1	...	...	...	
Enteric Fever.....	9	...	...	...	1	...	3	1	1	2	...	1	...	
Asiatic Cholera.....	...	...	...	...	...	...	...	...	...	...	...	...	...	
Epidemic Diarrhoea.....	35	23	11	1	...	...	...	...	...	...	...	...	...	
Diarrhoea.....	112	73	24	...	...	...	...	1	2	1	...	7	4	
Dysentery.....	...	...	...	...	...	...	...	...	...	...	...	...	...	
Malarial Fever.....	2	...	...	...	...	1	...	...	1	...	...	...	...	
Trench Fever.....	1	...	...	...	...	...	...	...	1	...	...	...	...	
Pellagra.....	...	...	...	...	...	...	...	...	...	...	...	...	...	
Hydrophobia.....	...	...	...	...	...	...	...	...	...	...	...	...	...	
Glanders.....	...	...	...	...	...	...	...	...	...	...	...	...	...	
Anthrax.....	...	...	...	...	...	...	...	...	...	...	...	...	...	
Tetanus.....	...	...	...	...	...	...	...	...	...	...	...	...	...	
Syphilis.....	34	28	1	...	...	1	2	...	1	1	...	...	...	
Gonorrhoea, Strict: Urethra.....	11	...	...	...	...	...	...	1	1	5	3	1	...	
Puerperal..	{	Septicæmia.....	7	...	...	...	1	1	2	3	...	...	...	
	{	Pyæmia.....	2	...	...	...	...	...	2	...	...	...	...	
	{	Phlegmasia Dol: Fever.....	3	...	...	...	...	1	2	...	...	...	...	
Infective Endocarditis.....	12	1	...	...	...	3	...	5	1	1	...	1	...	
Epidemic Pneumonia } Pneumonic Fever.....	4	1	...	1	...	1	...	1	...	...	...	...	...	
Erysipelas.....	8	1	1	...	...	1	1	...	1	1	1	...	1	
Septicæmia (not puerp: ).....	5	...	1	...	...	...	...	1	...	1	2	...	...	
Pyæmia (not puerp: ).....	...	...	...	...	...	...	...	...	...	...	...	...	...	
Phlegmon.....	...	...	...	...	...	...	...	...	...	...	...	...	...	
Phagedæna.....	...	...	...	...	...	...	...	...	...	...	...	...	...	
Other Septic Diseases.....	4	...	...	3	...	...	...	...	...	1	...	...	...	
Tubercular Phthisis.....	989	3	18	16	37	90	80	182	215	202	109	33	4	
Phthisis.....	114	...	1	...	4	10	4	15	22	28	20	8	2	



TABLE A, 1918—continued.

CAUSES OF DEATH	All Ages	AGES AT DEATH											
		UNDER 5 YEARS		5	10	15	20	25	35	45	55	65	75
		0 10	1 15	10	10	10	10	10	10	10	10	10	10
<b>3. DISEASES OF HEART.</b>													
Valvular Dis: Endocarditis ....	410	...	...	2	17	15	21	39	45	66	99	75	30
Pericarditis .....	6	...	...	1	1	...	...	1	1	...	1	1	...
Hypertrophy of Heart.....	...	...	...	...	...	...	...	...	...	...	...	...	...
Angina Pectoris .....	20	...	...	...	...	...	...	...	3	2	5	8	2
Dilatation of Heart .....	86	...	1	...	1	1	...	6	7	1	19	32	8
Fatty Degen: of Heart .....	17	...	...	...	...	...	...	...	2	2	7	5	1
Syncope, Heart Disease.....	381	2	7	4	6	3	7	12	26	52	88	122	45
<b>4. DIS: OF BLOOD VESSELS.</b>													
Cerebral Hæmorrhage.....	400	2	...	...	1	2	1	3	19	55	99	144	66
Apoplexy, Hemiplegia.....	103	...	...	...	...	...	...	...	3	19	27	35	17
Aneurism .....	15	...	...	...	...	...	...	...	...	5	4	5	1
Senile Gangrene .....	26	...	...	...	...	...	...	...	...	...	3	10	12
Embolism, Thrombosis .....	42	...	...	...	1	...	1	1	1	8	8	7	12
Phlebitis.....	...	...	...	...	...	...	...	...	...	...	...	...	...
Varicose Veins .....	1	...	...	...	...	...	...	...	...	...	...	...	1
Blood Vessels (Other Diseases)	140	...	...	...	...	...	...	...	2	12	29	45	41
<b>5. DIS: OF RESPIRATORY SYS:</b>													
Laryngitis .....	7	1	4	...	...	...	...	1	...	...	1	...	...
Memb: Laryng: (Not Diphth:)	...	...	...	...	...	...	...	...	...	...	...	...	...
Croup.....	1	...	1	...	...	...	...	...	...	...	...	...	...
Larynx (Other Dis:)	2	...	...	...	...	...	...	...	...	2	...	...	...
Bronchitis .....	1,053	128	89	9	2	1	2	17	41	83	170	288	205
Pneumonia { Lobar-Croupous.	428	18	36	20	19	12	19	65	60	69	55	42	12
{ Broncho-Lobular.	775	182	329	43	12	13	12	18	21	25	50	49	19
"Pneumonia".....	218	8	26	11	10	12	7	31	33	26	27	19	8
Emphysema, Asthma .....	26	...	...	...	...	...	...	3	4	11	2	3	3
Pleurisy .....	27	...	1	3	1	...	...	...	7	4	4	7	...
Fibroid Disease of Lung.....	...	...	...	...	...	...	...	...	...	...	...	...	...
Respiratory Dis: (Other) .....	25	3	1	...	...	1	1	2	1	2	3	7	...
<b>6. DIS: OF DIGESTIVE SYS:</b>													
Tonsillitis, Quinsy .....	2	...	...	1	...	...	...	...	1	...	...	...	...
Mouth, Pharynx .....	6	1	1	2	...	...	...	...	1	...	...	1	...
Gastric Ulcer.....	38	...	...	...	1	...	2	4	11	14	2	4	...
Gastric Catarrh.....	11	6	1	...	...	...	...	1	...	1	1	1	...
Stomach (Other Dis:)	43	21	5	...	...	...	...	...	2	5	1	3	...
Enteritis.....	21	...	...	...	...	...	...	...	4	3	2	6	...
Gastro-Enteritis.....	15	...	4	2	...	...	...	...	2	...	2	2	...
Appendicitis, Perityph: .....	34	...	1	2	5	4	3	3	8	1	2	4	...
Hernia .....	44	...	1	...	...	1	...	1	2	3	16	12	...
Intestinal Obstruct:.....	39	4	2	...	...	2	1	...	7	4	7	7	...
Other Diseases of Intestines ...	12	5	2	...	...	...	...	1	...	2	1	...	...
Peritonitis .....	9	...	1	1	1	1	...	2	...	2	1	...	...
Cirrhosis of Liver.....	33	...	...	...	...	...	...	...	2	9	14	7	...
Liver and Gall Bladder (O. D.).	31	10	...	...	...	...	...	1	1	6	2	9	...
Digestive System (Other Dis:)	22	16	1	...	...	...	...	1	1	1	2	...	...
<b>7. DIS: OF LYMPHATIC AND DUCTLESS GLANDS.</b>													
Spleen, Disease of.....	1	...	...	...	...	...	...	1	...	...	...	...	...
Lymphat: Syst: (Other Dis:)	15	4	1	1	...	1	...	2	2	3	...	...	...
Thyroid Body (Other Dis:)	6	...	...	...	1	...	...	...	1	1	1	2	...
Addison's Dis: (Dis: of) .....	6	...	...	...	...	...	...	1	...	1	3	1	...
<b>8. DISEASES OF URINARY SYSTEM.</b>													
Nephritis Ac: Uremia .....	87	2	3	2	1	3	5	12	12	14	16	12	...
Ch: Bright's Dis: Albumin: ...	188	...	1	...	2	1	5	12	15	32	57	49	...
Calculus .....	6	...	...	...	...	...	...	1	1	1	1	2	...
Bladder and Prostate Dis: ...	39	...	...	...	...	...	...	2	3	4	8	11	...
Urinary Syst: (Other Dis:)	13	1	...	...	...	...	1	...	2	2	4	3	...

TABLE A, 1918—concluded.

CAUSES OF DEATH	All Ages	AGES AT DEATH												
		UNDER 5 YEARS												
		0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85	85 and upwards
<b>DISEASES OF GENERATIVE SYSTEM.</b>														
Ovarian Tumour .....	10	...	...	...	...	...	2	4	3	1	...	...		
Ter Dis: of Ovary .....	3	...	...	...	...	1	2	...	...	...	...	...		
Uterine Tumour .....	3	...	...	...	...	...	...	1	1	...	1	...		
Ter Dis: of Uterus and Vagina	5	...	...	...	...	...	1	2	...	1	...	1		
Dis: of Menstruation .....	...	...	...	...	...	...	...	...	...	...	...	...		
Ter: and Mam: Orgs: (other)	8	...	3	...	...	...	2	3	...	...	...	...		
<b>DISEASES OF PREGNANCY AND CHILDBIRTH.</b>														
Abortion, Miscarriage .....	5	...	...	...	...	...	3	2	...	...	...	...		
Periperal Mania .....	1	...	...	...	...	...	1	...	...	...	...	...		
Periperal Convulsions .....	11	...	...	...	...	...	6	2	...	...	...	...		
Septicæ Prev: Flooding.....	3	...	...	...	...	...	2	1	...	...	...	...		
Ter Ac: of Preg: & Childbirth	4	...	...	...	...	...	4	...	...	...	...	...		
<b>DISEASES OF LOCOMOTOR SYSTEM.</b>														
Arthritis, Necrosis .....	1	...	...	...	...	...	...	1	...	...	...	...		
Osteomyelitis, Periostitis .....	5	...	...	...	...	...	...	...	...	1	3	1		
Other Locomotor Sys: (Other).....	10	...	1	3	2	...	1	...	...	2	1	...		
<b>DISEASES OF THE SKIN.</b>														
Ulcers, Bedsores .....	2	...	...	...	...	...	...	...	...	...	1	1		
Scabies .....	4	3	...	1	...	...	...	...	...	...	...	...		
Phlegmonous .....	4	3	...	1	...	...	...	...	...	...	...	...		
Other Diseases (other) .....	9	2	1	...	...	...	1	1	1	1	2	...		
<b>Other Specified Diseases</b>														
Other Ill-defined and not Specified Diseases.	4	1	...	1	...	...	...	...	...	2	...	...		
<b>Unspecified Diseases.</b>														
Phthisis, Debility.....	153	145	8	...	...	...	...	...	...	...	...	...		
Age .....	413	...	...	...	...	...	...	3	18	140	201	51		
Ascites, Anasarca .....	1	...	...	...	...	...	...	...	...	...	1	...		
Our .....	1	...	...	...	...	...	...	...	...	...	...	...		
Ess .....	7	2	1	1	...	...	1	...	1	...	...	1		
Emphysema .....	...	...	...	...	...	...	...	...	...	...	...	1		
Non-hæmorrhage .....	...	...	...	...	...	...	...	...	...	...	...	...		
Other (cause unascertained)...	...	...	...	...	...	...	...	...	...	...	...	...		
Other Ill defined .....	4	2	...	...	1	...	1	...	...	...	...	...		
<b>E.—Violent Deaths.</b>														
<b>ACCIDENT.</b>														
Mines and Quarries.....	2	...	...	...	1	...	...	...	1	...	...	...		
Vehicles { On Railways .....	2	...	...	...	1	...	...	...	1	...	...	...		
{ In Streets.....	35	5	8	2	1	2	2	3	2	5	2	1		
Boats, Docks (not crowding) .....	...	...	...	...	...	...	...	...	...	...	...	...		
Engineering Operations .....	1	...	...	...	...	...	...	1	...	...	...	...		
Machinery .....	7	...	...	...	1	...	1	2	2	1	...	...		
Tools and Implements .....	...	...	...	...	...	...	...	...	...	...	...	...		
Burns and Scalds .....	62	1	23	21	1	2	1	5	3	1	2	2		
Poisoning, Poisonous Vapours.....	13	...	1	1	...	2	1	1	3	2	1	1		
Strangulation .....	29	...	2	8	3	1	1	3	2	1	5	3		
Asphyxiation.....	26	24	2	...	...	...	...	...	...	...	...	...		
Other .....	77	...	2	1	6	2	...	3	7	11	13	15		
Other: Agencies.....	1	...	...	...	...	...	...	...	...	...	15	14		
Other: otherwise or not Stated .....	28	1	1	1	...	5	...	3	3	6	3	2		
<b>SUICIDE.</b>														
Suicide .....	2	1	1	...	...	...	...	...	...	...	...	...		
<b>EXECUTION.</b>														
Execution .....	36	...	...	...	1	1	7	8	6	9	4	...		

TABLE B.—MANCHESTER, 1918.  
CAUSES OF DEATHS AT DIFFERENT LIFE PERIODS—MALES.

Classes	CAUSES OF DEATH	All Ages	AGES AT DEATH—IN YEARS															
			UNDER 5 YEARS		5	10	15	20	25	35	45	55	65	75	85	95	100	
			0	1	10	15	20	25	35	45	55	65	75	85	95	100		
	All Causes.....	6056	789	688	215	134	161	122	416	567	816	895	831	376				
A	Smallpox .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
	Measles .....	97	23	66	8	...	...	...	...	...	...	...	...	...	...	...		
	Scarlet Fever .....	14	...	7	6	1	...	...	...	...	...	...	...	...	...	...		
	Typhus Fever.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
	Whooping Cough .....	144	38	97	9	...	...	...	...	...	...	...	...	...	...	...		
	Diphtheria, Memb: Croup .....	31	4	13	16	1	...	...	...	...	...	...	...	...	...	...		
	Ill-defined Fever.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
	Enteric Fever .....	3	...	...	...	...	...	1	1	...	...	...	...	...	...	1		
	Influenza .....	907	35	109	66	38	49	41	150	103	122	100	70	22	...	...		
	Epidemic Diarrhoea .....	23	16	7	...	...	...	...	...	...	...	...	...	...	...	...		
	Diarrhoea, Dysen., Simple Chol. ....	63	42	15	...	...	...	...	...	1	1	...	3	1	...	...		
	Veneral Affections.....	34	20	1	...	...	...	...	1	2	6	3	1	...	...	...		
	Erysipelas .....	6	1	1	...	...	1	...	...	1	1	1	...	...	...	...		
	Pyæmia, Septicæmia .....	8	...	1	3	...	...	...	1	...	1	2	...	...	...	...		
	Puerperal Fever .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
	Other Zymotics .....	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...		
	Tuberc. Periton: Tuberc Mes: ...	43	7	15	3	7	5	1	2	...	1	...	2	...	...	...		
	Tubercular Meningitis .....	45	6	21	8	4	2	1	1	1	...	...	...	...	...	...		
	Phthisis.....	632	3	12	3	17	33	37	95	137	163	100	28	4	...	...		
	Tuberculous Dis. (other) .....	59	1	11	3	6	9	7	5	3	9	3	2	...	...	...		
Parasitic Diseases .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
Alcoholism .....	2	...	...	...	...	...	...	...	...	2	...	...	...	...	...			
Rheumatic Fever.....	18	...	...	2	5	...	...	5	3	2	...	1	...	...	...			
Cancer .....	353	1	...	2	...	1	1	4	22	98	117	78	28	...	...			
Premature Birth.....	148	148	...	...	...	...	...	...	...	...	...	...	...	...	...			
Congenital Defects.....	34	29	4	1	...	...	...	...	...	...	...	...	...	...	...			
Epilepsy .....	56	...	...	...	1	5	3	4	17	13	7	4	...	...	...			
Convulsions .....	39	31	6	2	...	...	...	...	...	...	...	...	...	...	...			
Nervous Syst: (other) .....	211	11	20	7	3	5	2	7	37	48	52	15	...	...	...			
Cereb: Haem: Apoplexy, Hemip: ...	246	1	...	...	1	1	...	...	12	30	66	94	30	...	...			
Heart and Blood Vessel Dis: ...	546	2	6	5	10	6	5	28	45	85	141	141	6	...	...			
Pleurisy .....	18	...	...	1	...	...	...	...	7	4	4	2	...	...	...			
Croup .....	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...			
Bronchitis .....	521	73	42	4	2	...	...	12	27	45	92	139	8	...	...			
Pneumonia .....	727	121	182	34	20	14	11	58	74	69	66	61	1	...	...			
Respiratory Dis: (other) .....	34	3	4	...	...	...	1	1	3	11	3	5	...	...	...			
Digestive Syst: (other) .....	181	42	10	5	4	2	1	7	22	25	23	29	...	...	...			
Urinary Syst: (other).....	195	2	3	2	1	2	5	11	16	30	56	52	1	...	...			
Generative Organs .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
Other specified Diseases .....	144	25	9	8	2	12	2	11	15	16	24	15	...	...	...			
D	Marasmus and Atrophy.....	89	85	4	...	...	...	...	...	...	...	...	...	...	...			
	Old Age .....	174	...	...	...	...	...	...	...	2	7	64	8	...	...			
	Other Ill-defined Causes .....	8	3	1	...	1	1	...	...	1	...	1	...	...	...			
E	Violence .....	169	14	19	17	10	13	2	7	14	25	20	20	...	...			
	Homicide .....	2	1	1	...	...	...	...	...	...	...	...	...	...	...			
	Suicide .....	27	...	...	...	...	...	1	5	5	5	8	3	...	...			

TABLE C.—MANCHESTER, 1918.

CAUSES OF DEATHS AT DIFFERENT LIFE PERIODS—FEMALES.

CAUSES OF DEATH	AGES AT DEATH—IN YEARS													
	All Ages	UNDER 5 YEARS												
		0 to 1	1 to 5	Total	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85
All Causes .....	6125	589	735	223	151	227	265	571	525	601	732	865	548	93
Smallpox .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles.....	69	17	49	2	...	...	...	...	1	...	...	...	...	...
Scarlet Fever .....	7	...	2	3	...	1	...	1	...	...	...	...	...	...
Typhus Fever .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Whooping Cough .....	186	51	129	5	...	...	...	...	...	...	...	1	...	...
Diphtheria, Memb: Croup .....	24	...	9	12	1	1	...	...	...	1	...	...	...	...
Ill-defined Fever.....	2	1	...	...	...	...	...	...	...	1	...	...	...	...
Enteric Fever .....	6	...	...	1	...	2	...	1	2	...	...	...	...	...
Influenza .....	1189	22	140	71	46	75	115	260	134	112	102	85	22	5
Epidemic Diarrhœa .....	12	7	4	1	...	...	...	...	...	...	...	...	...	...
Diarrhœa, Dysentery, Simple	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cholera .....	49	31	9	...	...	...	...	1	1	...	...	4	3	...
Veneral Affections.....	11	8	...	...	1	2	...	...	...	...	...	...	...	...
Erysipelas.....	2	...	...	...	...	1	...	...	...	...	...	...	1	...
Pyæmia, Septicæmia .....	1	...	...	...	...	...	...	...	1	...	...	...	...	...
Puerperal Fever .....	12	...	...	...	1	2	4	5	...	...	...	...	...	...
Other Zymotics .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tubercular Periton: Tabes Mes.	34	5	11	4	3	7	...	1	2	...	1	...	...	...
Tubercular Meningitis .....	48	4	20	12	9	1	...	1	1	...	...	...	...	...
Phthisis .....	471	...	7	13	24	67	47	102	100	67	29	13	2	...
Tuberculous Diseases (other) ...	58	...	8	5	8	5	6	3	5	2	10	4	2	...
Parasitic Diseases .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Alcoholism .....	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Rheumatic Fever .....	28	...	1	3	1	6	1	...	6	4	2	2	1	...
Cancer .....	453	...	...	...	3	1	1	64	94	118	115	45	7	...
Premature Birth .....	132	132	...	...	...	...	...	...	...	...	...	...	...	...
Congenital defects .....	37	32	3	1	...	...	1	...	...	...	...	...	...	...
Epilepsy .....	39	...	...	...	1	5	7	12	7	3	4	...	...	...
Convulsions.....	22	15	7	...	...	...	...	...	...	...	...	...	...	...
Nervous System (other).....	131	7	25	5	5	4	5	7	15	17	25	13	2	1
Cerebral Hemorrhage, Apoplexy, and Hemiplegia .....	257	1	...	...	1	1	3	10	44	60	85	47	5	...
Heart and Blood Vessel Diseases	598	...	2	2	16	13	24	31	42	72	122	169	95	15
Pleurisy.....	9	...	1	2	1	...	...	...	...	...	...	5	...	...
Croup .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bronchitis .....	532	55	47	5	...	1	2	5	14	38	78	149	122	16
Pneumonia .....	694	87	209	40	21	23	27	56	40	51	66	49	24	1
Respiratory Diseases (other).....	26	1	1	...	...	1	...	5	2	4	3	5	3	1
Digestive System (other) .....	179	21	9	3	3	7	5	7	20	26	30	27	18	3
Urinary System (other).....	138	1	1	...	2	2	6	16	17	23	30	25	13	2
Generative Organs and Childbirth	53	...	3	...	...	...	4	21	13	5	4	2	1	...
Other specified Diseases .....	184	18	17	11	8	4	5	18	13	21	29	23	15	2
Marasmus and Atrophy.....	64	60	4	...	...	...	...	...	...	...	...	...	...	...
Old Age .....	239	...	...	...	...	...	...	...	1	11	76	119	32	...
Other Ill-defined Causes .....	5	1	...	...	...	...	...	2	...	...	...	...	2	...
Violence .....	114	12	17	23	2	1	4	11	4	6	7	8	16	3
Homicide.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Suicide .....	9	...	...	...	1	...	2	3	1	1	1	...	...	...

B and C

D

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TABLE D.  
CITY OF MANCHESTER, 1918.—CAUSES OF DEATH IN INFANCY AND  
CHILDHOOD.

CAUSES OF DEATH	UNDER ONE YEAR			Total under One Year	ONE AND UNDER FIVE YEARS				1 u 1 Y
	Under 3 months	3-6 months	6-12 months		1-	2-	3-	4-	
All Causes .....	679	263	436	1,378	638	344	249	192	2
Measles .....	...	2	38	40	55	26	21	13	
Scarlatina .....	...	...	...	...	2	2	4	1	
Whooping Cough .....	16	23	50	89	118	65	20	23	
Diphtheria..... (Memb: Croup)	...	1	3	4	7	1	8	6	
Fever (various forms) .....	...	1	...	1	...	...	...	...	
Diarrhoeal Diseases .....	43	19	34	96	24	9	...	2	
Syphilis .....	20	6	2	28	1	...	...	...	
Tabes Mesenterica and Tuberc. Peritonitis	1	5	6	12	11	6	7	2	
Tubercular Meningitis .....	3	2	5	10	20	7	7	7	
Tuberculosis (other).....	...	2	2	4	7	7	14	10	
Premature Birth .....	277	2	1	280	...	...	...	...	
Teething .....	1	3	4	8	4	1	...	...	
Convulsions .....	21	19	6	46	8	3	1	1	
Brain Diseases (other) .....	3	7	10	20	15	8	12	10	
Lung Diseases .....	83	67	190	340	253	114	70	50	
Atrophy, Marasmus .....	68	63	14	145	6	2	...	...	
Found Dead in Bed (over- laid)	16	3	3	22	1	...	...	...	
Suffocation .....	2	...	...	2	1	...	...	...	
Violence (other forms) .....	2	1	...	3	7	15	4	9	
Ill-defined Causes .....	4	...	...	4	1	...	...	...	
Unclassified .....	119	37	68	224	97	78	81	58	



TABLE G, 1918.—POPULATION, AREA, DENSITY. TOTAL BIRTHS AND DEATHS,  
WITH BIRTH AND DEATH RATES.

[INSTITUTION POPULATIONS, BIRTHS AND DEATHS, DISTRIBUTED.]

STATISTICAL DIVISIONS	Estimated Population <sup>*</sup>	Area in Acres	Persons to an Acre	BIRTHS		DEATHS		Natural Rate of Increase	Mean Death Rate 1908-1917
				Total	Rate per 1,000	Total	Rate per 1,000		
City of Manchester .....	770,248	20,799	37	12,911	16'76	12,181	15'81	0'95	16'18
Manchester Township.....	102,412	1,646	62	2,198	21'46	2,590	25'29	-3'83	23'94
North Manchester .....	224,680	7,321	31	3,640	16'20	3,096	13'78	2'42	13'67
South Manchester .....	443,156	11,832	37	7,073	15'96	6,495	14'66	1'30	15'27
Ancoats .....	38,072	400	95	854	22'43	923	24'24	-1'81	24'09
Central .....	17,452	748	23	322	18'45	459	26'30	-7'85	24'50
St. George's .....	46,888	498	94	1,022	21'80	1,208	25'76	-3'96	23'58
Cheetham .....	46,593	919	51	685	14'70	572	12'28	2'42	11'42
Crumpsall .....	11,200	733	15	98	8'75	153	13'66	-4'91	12'42
Blackley .....	16,937	1,840	9	198	11'69	174	10'27	1'42	13'40
Harpurhey .....	18,153	193	94	290	15'98	298	16'42	-0'44	13'41
Moston .....	31,495	1,297	24	468	14'86	320	10'16	4'70	10'50
Newton Heath .....	45,212	1,350	33	774	17'12	685	15'15	1'97	16'06
Bradford .....	26,262	288	91	593	22'58	475	18'09	4'49	17'03
Beswick .....	12,352	96	129	246	19'92	205	16'60	3'32	16'82
Clayton .....	16,476	605	27	288	17'48	214	12'99	4'49	13'03
Ardwick .....	39,109	509	77	759	19'41	679	17'36	2'05	16'46
Openshaw .....	33,665	581	58	656	19'49	485	14'41	5'08	16'32
Gorton (West) .....	26,579	318	84	611	22'99	482	18'13	4'86	16'35
Rusholme and Kirk .....	49,745	1,412	35	595	11'96	486	9'77	2'19	11'61
Chorlton-upon-Med .....	52,911	646	82	880	16'63	1,153	21'79	-5'16	18'91
Hulme .....	61,191	477	128	1,283	20'97	1,196	19'55	1'42	20'86
Moss Side .....	38,717	421	92	439	11'34	484	12'50	-1'16	12'73
Withington .....	62,564	5,728	11	759	12'13	657	10'50	1'63	10'42
Gorton .....	52,414	1,134	46	810	15'45	637	12'15	3'30	13'32
Levenshulme .....	26,261	606	43	281	10'70	236	8'99	1'71	10'13

TABLE H, 1918.

BIRTHS REGISTERED IN THE CITY OF MANCHESTER, IN ITS MAIN DIVISION AND IN DISTRICTS; DISTINGUISHING LEGITIMATE AND ILLEGITIMATE BIRTHS ALSO THE PROPORTION OF MORTALITY AMONG INFANTS OF BOTH CLASSES UNDER ONE YEAR OF AGE.

STATISTICAL DIVISIONS	BIRTHS			DEATHS UNDER 1 YEAR		PROPORTION OF DEATHS UNDER 1 YEAR PER 1,000 BIRTHS			Deaths under 1 Year per
	Total	Illegitimate	Percentage of Illegitimate Births to Total Births	Total	Of Illegitimate Children	Total	Legitimate	Illegitimate	
City of Manchester ...	12,911	877	6.8	1,378	161	107	101	184	1
I. Manchester Township	2,198	169	7.7	300	35	137	131	207	1
II. North Manchester ..	3,640	186	5.1	360	35	99	94	188	1
III. South Manchester ...	7,073	522	7.4	718	91	102	96	174	1
I. { Ancoats .....	854	60	7.0	122	16	143	134	267	1
{ Central .....	322	38	11.8	47	7	146	141	184	1
{ St. George's.....	1,022	71	7.0	131	12	128	125	169	1
II. Cheetham.....	685	43	6.3	46	8	67	59	186	1
Crumpsall.....	98	...	...	14	4	143	102	...	1
Blackley .....	198	11	5.6	19	1	96	96	91	1
Harpurhey .....	290	25	8.6	37	7	128	113	280	1
Moston.....	468	35	7.5	44	2	94	97	57	1
Newton Heath.....	774	26	3.4	71	7	92	86	269	1
Bradford .....	593	28	4.7	70	4	118	117	143	1
Beswick .....	246	9	3.7	30	2	122	118	222	1
Clayton.....	288	9	3.1	29	...	101	104	...	1
III. { Ardwick .....	759	63	8.3	92	10	121	118	159	1
{ Openshaw .....	656	34	5.2	62	3	95	95	88	1
{ Gorton (West) .....	611	36	5.9	85	7	139	136	194	1
{ Rusholme and Kirk.....	595	37	6.2	34	7	57	48	189	1
{ Chorlton-on-Med. ...	880	121	13.8	118	27	134	120	223	1
{ Hulme .....	1,283	102	7.9	154	15	120	118	147	1
{ Moss Side .....	439	37	8.4	37	6	84	77	162	1
{ Withington.....	759	38	5.0	50	6	66	61	158	1
{ Gorton .....	810	43	5.3	67	8	83	77	186	1
{ Levenshulme .....	281	11	3.9	19	2	68	63	182	1

TABLE J, 1918.

INFANTILE MORTALITY IN THE CITY, AND ITS THREE MAIN  
DIVISIONS.

DEATH RATES UNDER ONE YEAR PER 1,000 BIRTHS.

CAUSES OF DEATH	City of Manchester	Manchester Township	North Manchester	South Manchester
Causes .....	106·73	136·52	98·90	101·51
Measles .....	3·10	2·27	2·47	3·68
Whooping Cough .....	6·89	9·10	6·32	6·50
Other Com: Infectious Diseases†	0·39	0·45	0·27	0·42
Diarrhoeal Diseases .....	7·44	14·10	5·77	6·22
Tubercular Diseases‡	2·01	4·09	0·55	2·12
Convulsions .....	3·56	4·09	2·47	3·96
Other Nervous Diseases§	1·39	...	1·92	1·56
Scalding Diseases .....	26·33	38·67	25·27	23·05
Immature Birth.....	21·69	26·84	19·78	21·07
Atrophy, &c.	11·23	12·74	14·56	9·05
Asphyxiation .....	0·31	...	0·27	0·42
Found dead in bed (overlaid) ...	1·70	1·36	1·37	1·98

† These are Smallpox, Scarlatina, Diphtheria, Membranous Croup, and various forms of "Fever," including the chief forms of Typhus and Typhoid.

‡ These are Phthisis, Tubercular Meningitis, Tabes Mesenterica, and General Tuberculosis (of the lungs).

§ These are Meningitis, and other diseases of the Brain and Spinal Cord.

|| These are such ill-defined causes as Atrophy, Marasmus, Debility, Inanition, &c.

TABLE K, 1918.—CITY OF MANCHESTER. ANNUAL RATES OF MORTALITY PER 1,000 PERSONS LIVING AT ALL AGES, IN THE CITY OF MANCHESTER AND IN ITS STATISTICAL DIVISIONS, FROM CERTAIN DISEASES AND GROUPS OF DISEASES.

CAUSES OF DEATH	City of Manchester	Manchester Township	North Manchester	South Manchester	City of Manchester Average of 10 years 1908-1917
All Causes .....	15·81	25·29	13·78	14·66	16·18
Smallpox .....	...	...	...	...	...
Measles .....	0·22	0·33	0·20	0·20	0·48
Scarlet Fever .....	0·03	0·05	0·02	0·03	0·12
Typhus Fever .....	...	...	...	...	...
Influenza .....	2·72	4·37	2·48	2·46	0·15
Whooping Cough .....	0·43	0·90	0·34	0·36	0·29
Diphtheria and Membr: Croup.	0·08	0·12	0·06	0·07	0·14
Ill-defined Fever.....	0·00	...	...	0·00	...
Enteric Fever .....	0·01	0·01	0·02	0·01	0·07
Diarrhoeal Diseases .....	0·19	0·50	0·14	0·14	0·70
Puerperal Fever .....	0·02	0·01	0·03	0·01	0·03
Erysipelas .....	0·01	0·02	0·01	0·01	0·03
Pyæmia, Septicæmia .....	0·01	0·03	0·01	0·01	0·02
Phthisis (Tuberc: Pulmon:) ...	1·43	2·86	0·93	1·36	1·64
Tubercular Meningitis.....	0·12	0·22	0·09	0·12	0·22
Tuberc: Periton: Tabes Mes:..	0·10	0·20	0·09	0·08	0·12
Tuberculous Dis: (other) .....	0·15	0·21	0·10	0·17	0·18
Alcoholism .....	0·00	0·01	...	0·00	0·05
Cancer .....	1·05	1·23	0·89	1·08	0·99
Rheumatic Fever .....	0·06	0·07	0·07	0·05	0·06
Premature Birth .....	0·36	0·58	0·32	0·34	0·53
Nervous Diseases .....	0·65	1·04	0·52	0·62	0·78
Heart and Blood Vessels Diseases	2·14	2·82	1·92	2·09	2·41
Bronchitis .....	1·37	2·55	1·29	1·14	1·63
Pneumonia .....	1·84	3·17	1·82	1·55	1·68
Respiratory Diseases (other) ...	0·11	0·17	0·12	0·10	0·17
Digestive Organs (Diseases of)	0·47	0·64	0·10	0·46	0·70
Urinary Organs (Diseases of)	0·43	0·65	0·33	0·43	0·55
Old Age .....	0·54	0·96	0·44	0·49	0·55

TABLE I., 1918.

## MANCHESTER.—CERTIFICATION OF THE CAUSES OF DEATH IN THE MAIN

## DIVISIONS AND IN DISTRICTS.

STATISTICAL DIVISIONS.	Total Deaths	Certified by			Proportion per cent. of Deaths		
		Registered Medical Practitioners	Coroner	Not Certified	Certified by		Not Certified
					Regist'd Medical Practitioners	Coroner	
City of Manchester .....	12,181	11,448	632	101	94·0	5·2	0·8
Manchester Township ...	2,590	2,435	138	17	94·0	5·3	0·7
North Manchester .....	3,096	2,922	154	20	94·4	5·0	0·6
South Manchester .....	6,495	6,091	340	64	93·8	5·2	1·0
{ Ancoats .....	923	869	52	2	94·2	5·6	0·2
{ Central .....	459	426	28	5	92·8	6·1	1·1
{ St. George's .....	1,208	1,140	58	10	94·4	4·8	0·8
{ Cheetham .....	572	542	25	5	94·7	4·4	0·9
{ Crumpsall .. .....	153	143	8	2	93·5	5·2	1·3
{ Blackley .....	174	167	6	1	96·0	3·5	0·5
{ Harpurhey .....	298	282	15	1	94·6	5·0	0·3
{ Moston .....	320	301	12	7	94·0	3·8	2·2
{ Newton Heath .....	685	654	31	...	95·5	4·5	...
{ Bradford .....	475	438	34	3	92·2	7·2	0·6
{ Beswick .....	205	192	13	...	93·7	6·3	...
{ Clayton .....	214	203	10	1	94·8	4·7	0·5
{ Ardwick .....	679	641	34	4	94·4	5·0	0·6
{ Openshaw ... .....	485	462	21	2	95·3	4·3	0·4
{ Gorton (West) .....	482	441	32	9	91·5	6·6	1·9
{ Rusholme and Kirk. ...	486	458	24	4	94·3	4·9	0·8
{ Chorlton-upon-Medlock	1,153	1,080	66	7	93·7	5·7	0·6
{ Hulme .....	1,196	1,114	68	14	93·1	5·7	1·2
{ Moss Side .....	484	458	18	8	94·6	3·7	1·7
{ Withington .....	657	619	31	7	94·2	4·7	1·1
{ Gorton .....	637	596	36	5	93·5	5·7	0·8
{ Levenshulme .....	236	222	10	4	94·1	4·2	1·7

TABLE P. 1918.—WORK OF SANITARY DEPARTMENT FOR THE YEAR.

	TOWNSHIPS														TOTALS									
	Ancoats	Central	St. George's	Cheetham	Crimpsall	Blackley	Harpurhey	Moston	Newton	Bradford	Beswick	Clayton	Ardwick	Openshaw		Gorton (West)	Kirkstall and Levenshulme	Chorlton-upon-Medlock	Hulme	Moss Side	Withington	Levenshulme	Gorton	
Complaints to Sanitary Superintendent	553	182	995	1063	99	116	169	176	414	323	144	121	331	196	263	107	358	1678	405	294	60	173	8,224	
Dwelling-houses	1757	1262	993	1268	79	806	810	666	1204	460	717	226	611	242	1278	276	1011	2492	1567	880	143	1391	20,139	
Newly-infected Dwelling-houses	160	89	231	171	8	22	67	114	204	62	44	48	164	166	169	103	163	339	117	182	85	179	2,887	
Cellars	16	31	6	9	...	...	...	...	6	...	...	...	...	...	...	...	...	163	22	5	...	...	257	
Schools	1	...	...	...	...	5	2	1	2	2	...	...	2	...	...	...	...	5	20	5	...	...	47	
Factories and Workshops	28	48	1	49	...	9	1	1	9	2	7	4	3	...	...	...	...	153	19	1	2	...	355	
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